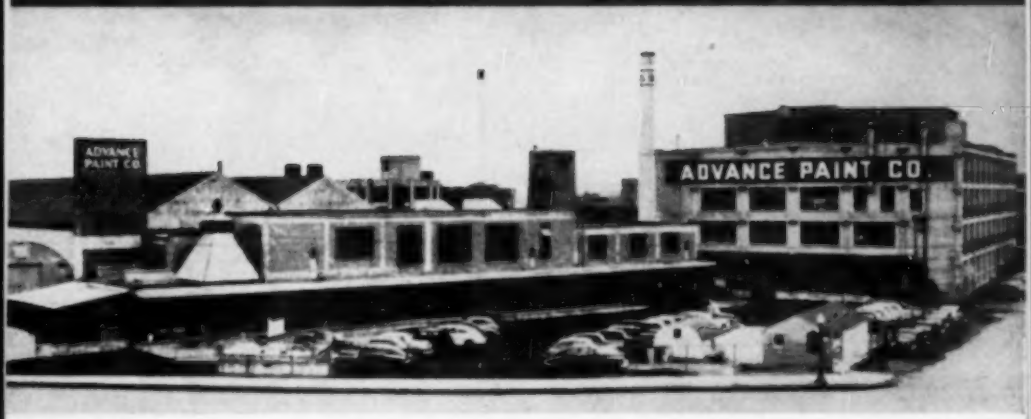
Industrial FINISHING



The best place in the world to send a finishing problem

For best results, send your next finishing problem to the world's most modern finish factory . . . the new 2-million dollar Advance plant which went into production last year.

Here is the finest in production equipment. Here are expert technicians with the benefit of 50 years' experience. Here you can be sure of finding a fast, effective and low cost solution to your finishing problems.

Advance PAINT COMPANY

Indianapolis Indiana

MANUFACTURERS OF INDUSTRIAL FINISHES

Interchemical *Finishes*

UNDERCOATS, VARNISHES, LACQUERS,
ENAMELS for METAL, PLASTIC, WOOD

To give your product a good start, give it an Interchemical Finish!

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FACTORIES: ELIZABETH, CINCINNATI, CHICAGO, LOS ANGELE

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new strippers

are available even more powerful than Enthone Regular Enamel Stripper which has been used by industry for the past fifteen years. These new strippers include:

stripper S-15:

For stripping nitrocellulose lacquers.

stripper S-17:

A volatile room temperature stripper for removing heavy coatings from work holders, hooks and production work.

stripper S-19:

A powerful quick evaporating room temperature stripper for clear and pigmented synthetics.

stripper S-45:

A brush-on, thickened spot enamel stripper for synthetics.

stripper P:

A stripper mixed with water to form a clear dispersion that strips alkyd, ureaformaldehyde and melamine synthetic enamels.

stripper S-300:

An emulsion stripper that mixes clearly with water for fast stripping of synthetic enamels from all metals.

stripper WS-70:

A quick evaporating stripper for removing enameled coatings from wire.

Also special strippers for specific problems.

For fifteen years Enthone chemists have specialized in development of strippers for organic finishes. Take advantage of their experience and send samples of your products to them for stripping advice.

Enthone INC.

Metal Finishing Chemicals—442 Elm Street, New Haven, Conn.

TRADITIONAL
or MODERN

Stewartcraft Tables Have the RIGHT Finish!

The handsome tables by the G. S. Stewart Company combine the qualities of genuine mahogany, blond oak, and authentic designing with careful craftsmanship and a specially created finish. This finish, the result of years of experience plus the complete modern facilities of our studios, was created not only for richness and durability, but for the practical production economy that helps to establish a price that SELLS.

For further information regarding our studio facilities and services, please write to

GRAND RAPIDS VARNISH CORPORATION
GRAND RAPIDS, MICHIGAN
***Makers of the Famous* Guardsman Finish**
***and* Guardsman Cleaning Polish**

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the 18th of each month by
PRACTICAL PUBLICATIONS
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1142 N. Meridian St.
Indianapolis 4, Ind.
Telephone Riley 6771

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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FEBRUARY, 1950
Vol. XXVI, No. 4

CCA

...stributed monthly to finishing ...om and paint shop foremen, ...oduction superintendents, ...emists, purchasing agents and ...mpany executives of industrial ...nts where production cleaning ...d finishing are major opera...ns in the manufacture of parts ...d products.

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26 TWENTY-SIXTH YEAR OF PUBLICATION

Teaches Finishers. In response to continuing demand, the Department of Chemical Engineering at New York University is again offering a series of graduate courses in Surface Technology. There are three separate courses embracing a study of the principles involved in protective, decorative and functional finishing, methods of testing and evalulating surface finishes and research.

For additional information, address Henry J. Mason, Assistant Dean, in Charge of Graduate Division, New York University, College of Engineering, University Heights 53, New York City.

* * *

Successful Show. The January furniture show at Chicago was successful from every standpoint. Buying was so spirited that several large manufacturers were forced to "quota selling" on a few fast moving numbers; first time this has happened since late in 1948.

The trend of the market was not toward new lines; however, most manufacturers showed one or two. Perhaps the most important new item was the living room furniture shown by Kroehler; it combines welded steel and wood in upholstered pieces. This type of furniture may be mass produced, using assembly line techniques.

Television receiver and appliance manufacturers came in for such a huge volume of orders that some of them went home to boost their production schedules as much as 30%.

In 1948, retail volume in furniture reached an all time high of 12 billion 200 million dollars, and according to several furniture men, "1950 could be as good as 1948". This sounds awfully good, but there is ample evidence that their prediction is well founded.

* * *

Charts Tell You Quickly. R. R. Lutz who wrote the book "Graphic Persentation Simplified" (Funk & Wagnalls Co., $4.00) declares that, "Charts are the shorthand of statistics. Statistical data presented graphically has a great advantage over tables in that it is more easily understood and remembered than the same facts in tabular form."

It might be well to employ simple charts to record volume of production and departmental as well as total manufacturing costs in relation to sales, so that all workers may see what goes on. Charts have a place other than in the sales department, or at a board of directors meeting.

The book provides detailed information on a wide variety of charts, how to make and use them, and offers several chapters on a training program for the beginner who is without skilled supervision.

* * *

A New Service Unit has been formed for the benefit of furniture manufacturers and retailers. It is known as the National Furniture Traffic Service, New York Division,

Dolan's 35% HI-SOLIDS LACQUER

. . . sprays right from the drum: requires no thinning or heating. 35% solids in a single application.

OUTSTANDING!!

. . . Because it can be sprayed without the addition of thinners or the necessity of pre-heating to bring down to spraying viscosity, Dolan's 35% Hi-Solids Lacquer gives an improved finish at greatly reduced cost. It is unusually tough, with exceptional cold check resistance. Very light in color. Fits into any finishing schedule. A demonstration will prove convincing. Write us for 5 gallons at drum price!

"From the start consider the Finish"

V. J. DOLAN & COMPANY, Inc.

Manufacturers of *"Unquestionable Quality"*

INDUSTRIAL FINISHES

1830 N. Laramie Ave. Chicago 39, Ill.

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INTRODUCING

NEW 77 LINE

BAKING WHITE

SEA-LAC

ALL-PURPOSE
ONE-COAT
BAKING WHITE
ENAMEL

- Excellent gloss
- High reflectivity
- Marproof
- Spray or dip
- Bakes to full hardness in 30 minutes at 275° F. or 20 minutes at 300° F.

Duralac Chemical Corp.
84 LISTER AVE., NEWARK 5, N. J.

SEND FOR SAMPLES

and is a voluntary non-profit trade association. It is supported by local and national associations of the furniture and toy industries. Offices are located at 71 Park Avenue in New York City.

* * *

A New Adhesive for bonding cellulose acetate has been perfected. It is said to be highly efficient and less hazardous than acetone. Acetate Cement is the name of this new product which was developed especially for industrial use because it is safer to use than highly inflammable acetone.

* * *

Copper Paste suitable for use in copper brazing operations has been developed. It is called "Cubond," and is applied by extrusion from pneumatic or hand operated guns.

It is available in two types, one with a synthetic petroleum base, and the other with a base that does not change viscosity with changes in temperature. The petroleum base paste may be thinned for brushing or spraying.

* * *

Walnut Furniture. Enlivened by a wider use of natural figured woods and many new finishes, including sparkling new grey tones, more American Walnut case goods suites were shown and purchased at the Chicago and Grand Rapids markets than at any time in the past decade, according to Burdett Green, manager of the American Walnut Manufacturers Association. This resurgence of Walnut, it is pointed out, is so sweeping that it has assumed the proportions of a definite style trend which will put this native hardwood back in the forefront of consumer popularity, a position it enjoyed for many years prior to the war era when most available walnut was demanded by the government for gunstocks.

The real upward swing in walnut

HERE'S ONE OVERHEAD THAT *SAVED* MONEY

To this midwestern manufacturer, spraying and baking automotive parts on a continuous conveyor 191 ft. long, didn't seem too difficult—until it was learned that only a 70 ft. x 10 ft. floor area was available to do the job. Typical Jensen ingenuity and "know-how" gained through years of radiant heating and conveying experience answered the problem with this Coordinated Finishing System.

It consists of a specially designed endless conveyor which carries parts at predetermined speeds through an automatic spray booth, up to, and through a ceiling suspended "Dual Heat" infrared oven, then downward in a cooling cycle of multiple elevations until parts are delivered at the point of loading and unloading ready for packing and shipping.

● **YOU TOO, CAN PROFIT** by having Jensen plan and construct your finishing system. You get space-saving lay-out—efficient conveying coordinated with proper radiant heating equipment . . . *better, faster finishing at less cost!*

Jensen SPECIALTIES INCORPORATED

● Representatives in Principal Cities

9331 FREELAND AVENUE • DETROIT 28, MICHIGAN

MANUFACTURERS OF *ECONOMY-ENGINEERED* RADIANT HEAT EQUIPMENT

"DUAL HEAT" INFRARED OVENS • CONVEYORS • PAINT DIP TANKS

Industry's 3 Newest

COLD STRIPPERS

Fast! Economical! Safe! New!

"UNISOL"—for removing all baked enamels! Used cold—Non-inflammable—Non toxic—Strips baked enamels in seconds—Used for all type metals—Requires no rinse—Non-injurious to hands or clothing.

"UNISOL No. 2"—A new cold stripper for japans and vinyls—Non-inflammable—Strips tough japans and vinyls in matter of minutes—Used for all type metals.

"STRIPPER 202"—Something new for removing "stop-off" lacquers in seconds—Will not tarnish highly polished metal surfaces—Non-inflammable—Used cold—Non toxic.

Samples and further information supplied on request.

CHEMCO PRODUCTS CO., Inc.

7740 WEST 47TH STREET LYONS, ILLINOIS

RONCI SPEEDIP WHIRL ENAMELER

Made In Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

PROMPT DELIVERIES

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE 11, R. I.

began as far back as two years ago when several manufacturers added new walnut suites to their lines. By last July when 150 new walnut groupings made their debut, a total of 380 walnut suites were counted at the markets. At the recent January markets there were some 500 walnut offerings in case goods alone; and 73 factories have put walnut in their occasional table lines.

* * *

Pleasant Odor Products. Industry's effort to make some of its products smell better—and, incidentally, sell better—has made new progress. The Du Pont Company advises that it has available commercial quantities of a new series of odorants for rubber and related products.

They'll give rubber products the scent of mountain air after a summer shower. May be used in foam rubber products such as pillows, mattresses, and seat cushions; latex-bonded upholstery and rug-backing fibers to reodorize both rubber and fibers; rubber-containing adhesives; such rubber goods as dress shields, gloves, girdles, hot water bottles, and tops; and certain plastics.

Odorants are available for natural and synthetic rubber, including Du Pont's chemical rubber, neoprene. The company is making a series of them under the trade-mark "Alamask." They may be employed singly or in combination, and concentrations from one-tenth to one-hundredth of 1%, added during the manufacturing process, are sufficient.

* * *

Finely Powdered Starch. National Starch Products, Inc., New York City, has announced a new product, "Dry-Flow," which is such a finely-divided powder and of such silk-like texture that it flows almost like water. However, it is hydrophobic and therefore

(Continued on page 123)

Arrow Lamp

LIKES LACQUER BEST BECAUSE...

...lacquer's water-white transparency keeps bright the lustre of newly polished metal.

Murray Drexler of Arrow Lamp Mfg. Co., and former President of the National Lamp & Shade Manufacturers Association says: "Lacquer is the one finish that provides dependable protection for our lamps against all kinds of hostile elements ranging from tropical heat and salt sea air to sub-zero cold."

HERCULES POWDER COMPANY
928 Market St., Wilmington 99, Del.

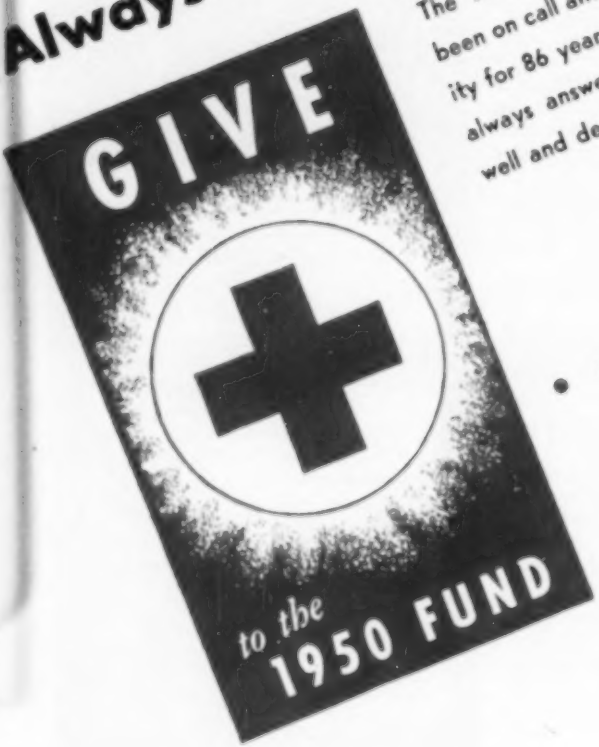
HERCULES DOES NOT MANUFACTURE LACQUERS, ONLY THE DERIVATIVES FROM WHICH THEY ARE MADE.

LACQUER HELPS YOU SELL

CLSO-2

Always on call . . .

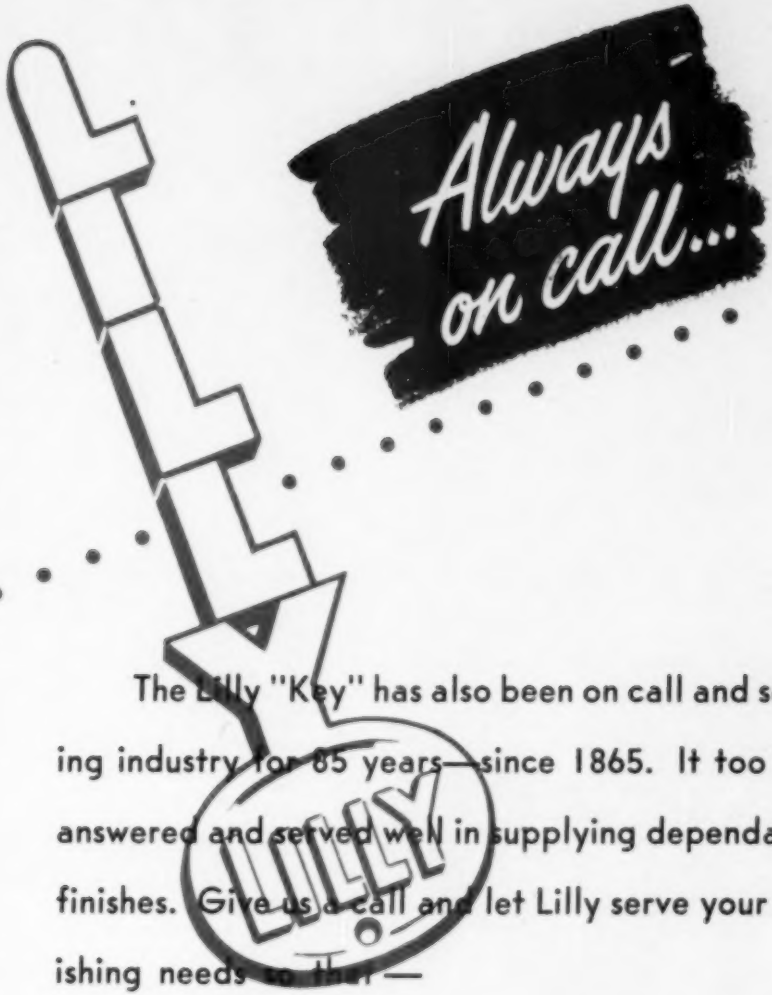
The American Red Cross has been on call and serving humanity for 86 years—since 1864. It always answers the call, serves well and deserves your support.



Now!

THE Lilly FINISHES COMPANY

High Point, N. C.



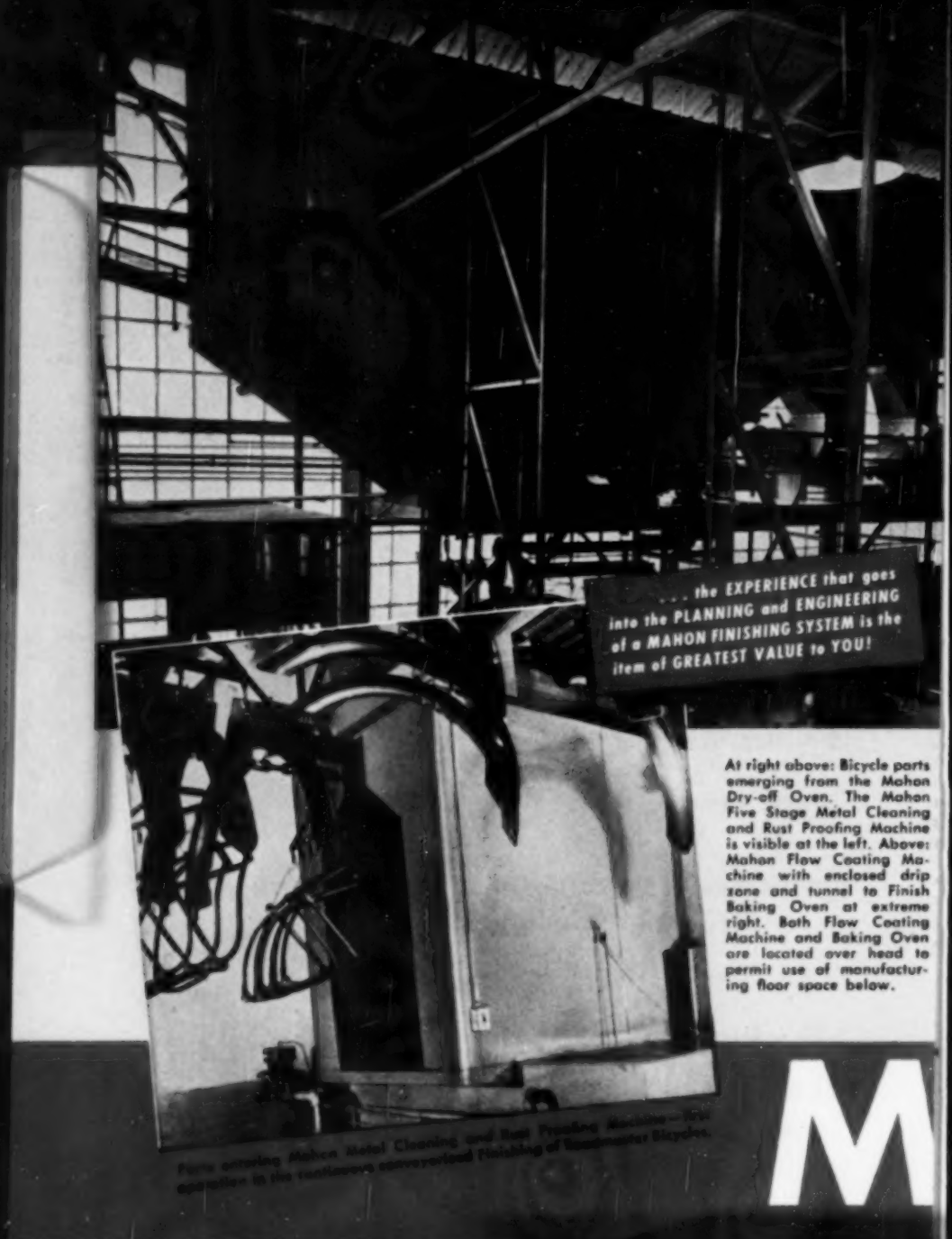
The Lilly "Key" has also been on call and serving industry for 85 years—since 1865. It too has answered and served well in supplying dependable finishes. Give us a call and let Lilly serve your finishing needs so that—

"WITH THE RIGHT FINISH — YOU'LL FINISH RIGHT"

THE Lilly FINISHES VARNISH COMPANY

Indianapolis, Indiana
Gardner, Mass.

COMPLET



. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of a MAHON FINISHING SYSTEM is the item of GREATEST VALUE to YOU!

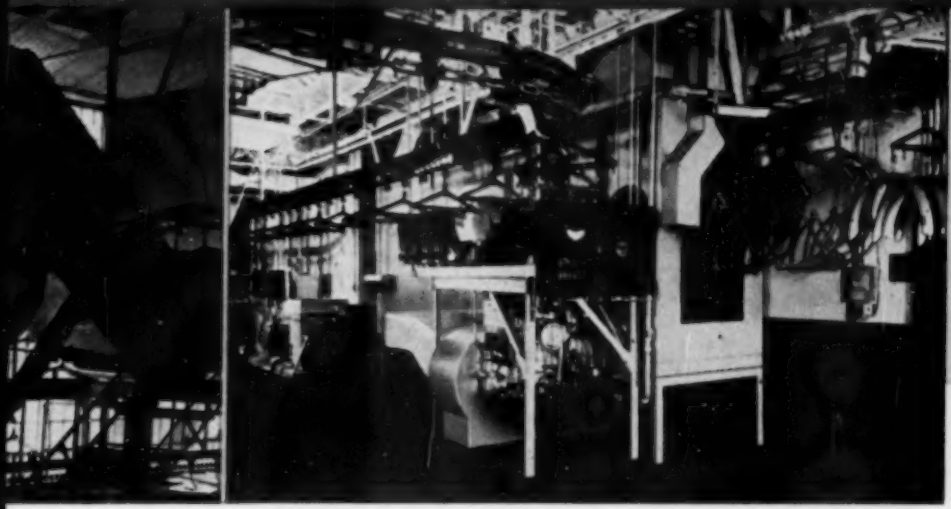
At right above: Bicycle parts emerging from the Mahon Dry-off Oven. The Mahon Five Stage Metal Cleaning and Rust Proofing Machine is visible at the left. Above: Mahon Flow Coating Machine with enclosed drip zone and tunnel to Finish Baking Oven at extreme right. Both Flow Coating Machine and Baking Oven are located over head to permit use of manufacturing floor space below.

Parts entering Mahon Metal Cleaning and Rust Proofing Machine—first operation in the continuous conveyorized Finishing of Stainmaster Bicycles.

M

Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH



Bicycles too, get a FINER, more DURABLE Finish!

The Complete Finishing System illustrated on these pages was planned, engineered, built and installed by Mahon for the Cleveland Welding Company, manufacturers of the famous Roadmaster Bicycle. The system was designed to produce the finest finish obtainable at lowest possible unit cost, and to occupy a minimum of floor space within the plant . . . it provides continuous conveyorized processing from metal cleaning and rust proofing through dry-off, flow coating, and finish baking operations. The flow coating machine and baking oven are located over head to conserve manufacturing floor space. This is another typical example of good planning and good engineering in modern production equipment designed to reduce costs and improve product finish. If you have a finishing problem, or are contemplating new finishing equipment, remember that the Mahon organization has pioneered development in his highly specialized field for thirty years . . . broad experience in every industry where finishing constitutes a major production operation, plus constant research and experimentation, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. See Mahon's Insert in Sweet's Mech. Ind. File, or write for Catalog A-649.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 11, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens. Also, Core Ovens, Hydro-Foam Dust Collectors, and many other Units of Special Production Equipment.

MAHON

A GOOD START

...a Stronq Finish!

TOUGH AND MAYPROOF

HOT GREASE? NO HARM DONE!

STAYS WHITE AND STAIN-FREE!

CLEANS EASILY . . . SAFELY!

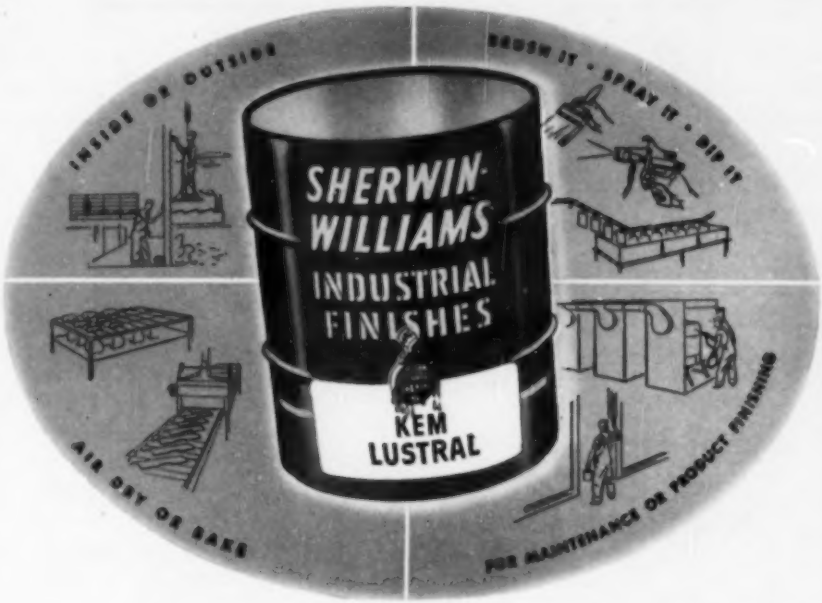
Appliance sales often *start* with the *finish*. They often end there, too, unless the finish has the punishment-resisting, white-for-life beauty made possible by the newest synthetic resin finishes!

Kemclad* Appliance Finishes are designed to adapt these qualities to the specific needs of appliance manufacturers. They provide the permanence and protection against abuse expected by today's buyers. Greater hardness and flexibility enable minor defects to be easily rubbed or "dinged" out after baking. Extremely high solid content with low viscosity give better protection at lower cost per finished unit. Write for details. The Sherwin-Williams Co., Industrial Division, Cleveland 1, Ohio. *Trademark

SHERWIN-WILLIAMS KEMCLAD*

APPLIANCE FINISHES

ANOTHER PRODUCT OF SHERWIN-WILLIAMS INDUSTRIAL RESEARCH



How to make *LESS PAINT* do *MORE WORK!*

AS HANDY AS YOUR TELEPHONE

Kem Lustral Enamels are stocked, ready-to-use, at your local Sherwin-Williams branch store, in 31 standard colors, plus black and white. You'll find other Industrial Finishes stocked there, too:

- LUSTRAL ENAMELS
- OPEX LACQUERS
- KEM ARTMETAL (WRINKLE) FINISHES

You'll find a quick, handy, moneysaving answer to an amazing variety of production and maintenance problems in this all-round, top-quality Industrial Enamel!

Quick, because Kem Lustral Synthetic Enamels are as handy as your phone—stocked, ready-to-use, at your local Sherwin-Williams branch store.

Handy, because you can use them almost anywhere for anything— product finishing or maintenance—inside or outside—air-dried or baked—brushed, sprayed or dipped.

Moneysaving, because they provide the same high-quality pigments and vehicles of the best special finishes obtainable, but at less cost because of large-volume production and nationwide distribution!

Call your Sherwin-Williams branch store—get acquainted with them and with this flexible, quality coating! The Sherwin-Williams Co., Industrial Division, Cleveland 1, Ohio.

Another product of Sherwin-Williams Industrial Research

SHERWIN-WILLIAMS INDUSTRIAL FINISHES

What They Say!

"In my opinion, the DE BURGH CONVEYOR is the greatest improvement in finishing since the introduction of spray guns."

B. M. Baker,
Grand Rapids Chair Co., Grand Rapids, Mich.

"The mere fact that we again selected a DE BURGH CONVEYOR after having operated one for several years speaks for itself."

F. J. Michaels,
Oxford Cabinet Co., Oxford, Pa.

"Our finish has been greatly improved in quality. We heartily recommend your system."

Harry L. Greenberg, Treas.-Secy.,
Angelus Furniture Mfg. Co., Los Angeles, Calif.

"After operating the DE BURGH FINISHING SYSTEM for more than a year, we again visited a number of other conveyorized plants, and are fully convinced that we have the *best.*"

H. C. Lucas, Secretary,
Gillespie Furniture Co., Los Angeles, Calif.

"We consider it a key machine and are immensely pleased with our investment; our production is high, our costs are low and our quality improved."

Maury Ranier, Plant Supt.,
L. A. Period Fur. Mfg. Co., Los Angeles, Calif.

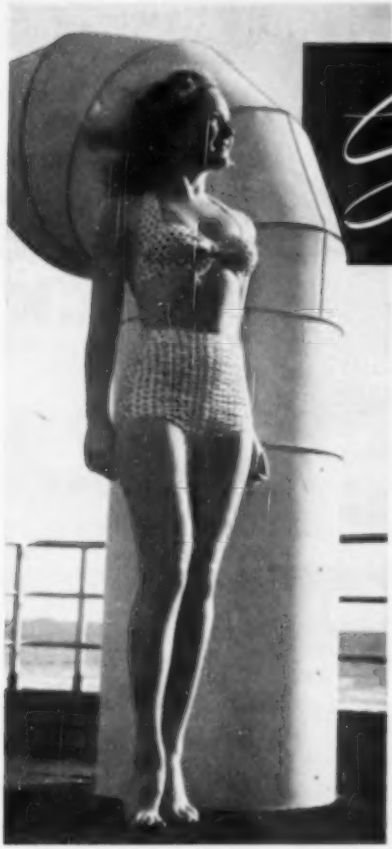
The many special features of the DeBurgh Finishing System, developed especially for furniture finishing, are protected by U. S. Patent No. 2,317,675 and other patents pending.

Investigate! **DeBurgh Conveyors**

Patented and Patents Pending

For Assembly, Finishing and Upholstering

1741 K St., N. W., Washington 6, D. C.



Shipshape

Products bearing finishes produced by our Creative Studio are "shipshape" . . . they're neat, trim, good to look at.

Not only that, these finishes are also tough and durable . . . they provide a protective coating that is extremely long-lasting.

If you are confronted with a finishing problem — whether it is relative to metallic or wooden merchandise — submit a sample of your product for an individualistic coating.
No obligation, of course.

No Tampering with Quality

ROCKFORD VARNISH *Company*
ROCKFORD, ILLINOIS

Manufacturers of Protective and Decorative Coatings

YOU'RE IN GOOD SHAPE WITH ANY SHAPE...

USING ECONOMICAL

Cellusuede FLOCK

IDEAL FOR PLAIN OR 3 DIMENSIONAL OBJECTS

Cellusuede Flock — the decorative and functional material that conforms to any shape — is your low-cost answer to product finishing. Flock is applied easier and quicker than fabric liners and mar-proofers . . . eliminates the tedious hand-cutting, trimming, and placing so common with woven materials.

Cellusuede Flock comes in Rayon to give the effect of velvet . . . in cotton which looks and feels like suede. Each type is cut in various lengths to give the nap desired. Each is dyed in a wide range of standard colors . . . special hues are available on request. See how Cellusuede Flock can increase your volume and cut down production costs.

Send for details today!

CELLUSUEDE PRODUCTS, INC.

510 N. MADISON STREET, ROCKFORD, ILLINOIS

Your Signal! **9-8-7-0**

CLEAR METAL LACQUER

For

silver, cadmium, zinc, copper, brass, aluminum.

OUTSTANDING

1. Adhesion to metal surfaces
2. Resistance to sulfur tarnish
3. Resistance to oxidation
4. Resistance to perspiration
5. Resistance to abrasion

Pale in color. Takes 100-200% reduction. Dries under 15 minutes.
A premium product — priced at ordinary lacquer levels.

THE VARNISH PRODUCTS COMPANY
5206 HARVARD AVENUE
CLEVELAND, OHIO

FASTER REFINISHING WITH
***ELECTRO* COLD STRIPPER**

▸ No more long waits while slow-acting paint removers do their work like a team of lumbering oxen. Simply dip the article into Electro Cold Stripper and—Presto!—you can see the old finish literally "pop off" before your eyes. Wash with a pressure stream of water or wipe well with rag and REFINISH IMMEDIATELY. No fuss, no waiting, no bother.

▸ Used cold. Non-inflammable. Non-injurious to hands or metal when used as directed.

▸ Removes paints, enamels, synthetics, lacquers and wrinkles in minutes—not hours. Especially effective on hard-to-remove baked-type finishes. Will not harm even precision finished aluminum, copper, brass, magnesium, zinc, steel, cast iron or their alloys in time required for removal of paint film.

Write for sample and quotations—or order 5 gallons at drum price.

ALLIED FINISHING SPECIALTIES CO.
2641 W. GRAND AVE. · CHICAGO 12, ILL.

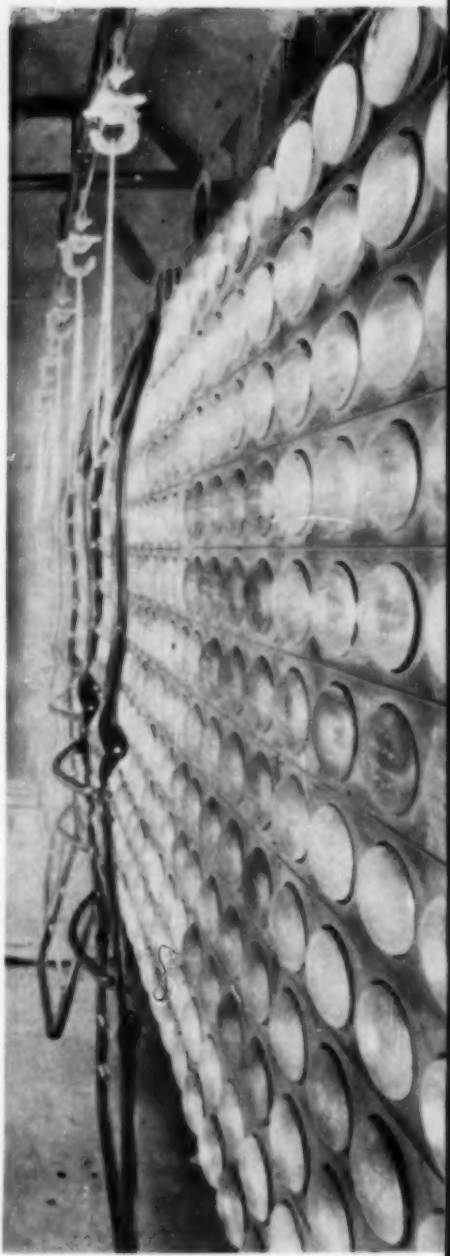
Infra-Red DEGREASING and Paint Baking

By Paul H. Krupp*

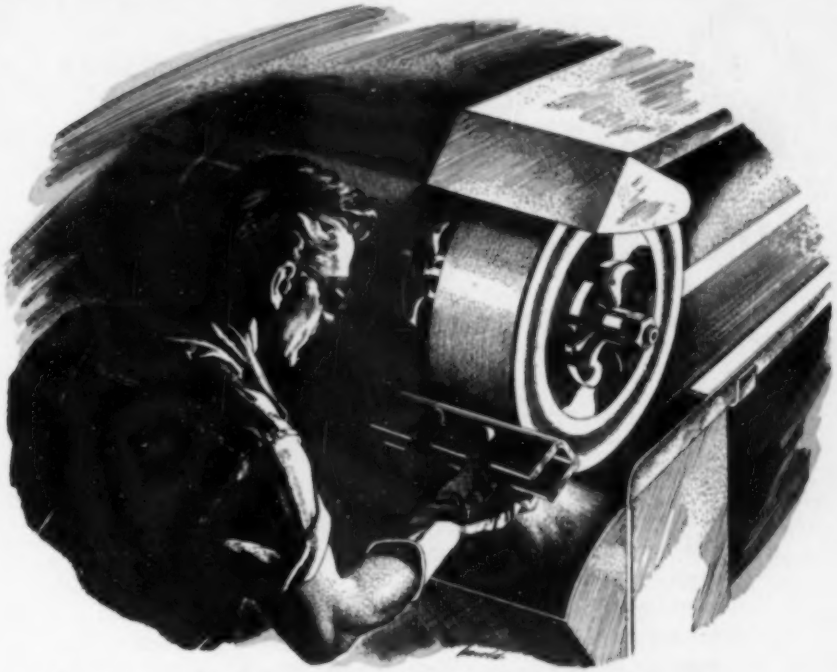
SOME metalworking concerns, where finishing operations are involved, report favorably on the use of infra-red heat for metal degreasing and paint baking. In each case a conveyor system is used for the complete finishing operation, including degreasing, spraying, baking, cool down and final assembly or packing.

How does it work? How can a little infra-red heat remove grease? "Heat" is the answer, but it takes more than just a "little". Infra-red degreasing requires product temperatures of around 550° F. At approximately that temperature, any grease on the metal is carbonized, and most of the carbonization is carried off with the smoke and fumes through the use of an overhead ventilation system. Is there any flame present during the operation? No, no flame. [*To page 23*]

*Manager Sales Promotion for Fostoria Pressed Steel Corp., manufacturer of infra-red systems. Mr. Krupp has been closely identified with the infra-red process, both promotion and sales wise, since its inception as industrial equipment.



A peek inside the degreasing oven wherein metal chair frames are subjected to burn-off heat by infra-red lamps on both sides.



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Whether you grind wet or dry, you can speed production and reduce costs by applying these two factors: (1) *quality* abrasives and, (2) *proper application.*

It's easy to specify quality abrasives. Ask your jobber for abrasives by CARBORUNDUM. You can get belts, sander discs, and other forms exactly to your needs. Hard, sharp, uniformly spaced grains give faster cutting with minimum heating. Firmly bonded to high-grade backings, grains stay put...refuse to shed under hard service. These products resist cracking, burning, loading, glazing.

Correct application is another service of your jobber. His broad experience in supplying the metal-working industry qualifies him to discuss your problems...to offer suggestions of a practical nature that can lead to time-saving short-cuts and better work. We keep him technically informed on abrasive products...so he can help you select the right abrasive for any polishing or grinding operation. The Carborundum Company, Niagara Falls, New York.

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"The big parts are ready. We cleaned 'em with the OAKITE Steam Gun"

HERE'S an easy, low-cost way to clean metal parts that are too large to be soaked in tanks or conveyed through washing machines.

Just use the Oakite Solution-Lifting Steam Gun to apply an Oakite cleaning solution under about 40 pounds of steam pressure. Oil, grease and other dirts vanish quickly, leaving parts ready for inspection, assembly, further machining, pre-paint treatment, etc. (The same gun applies Oakite paint-stripping solutions under low pressure.)

FREE For illustrated folder F7338—telling more about the money-saving Oakite Steam Gun—write to Oakite Products, Inc., 32F Thames St., New York 6, N. Y.

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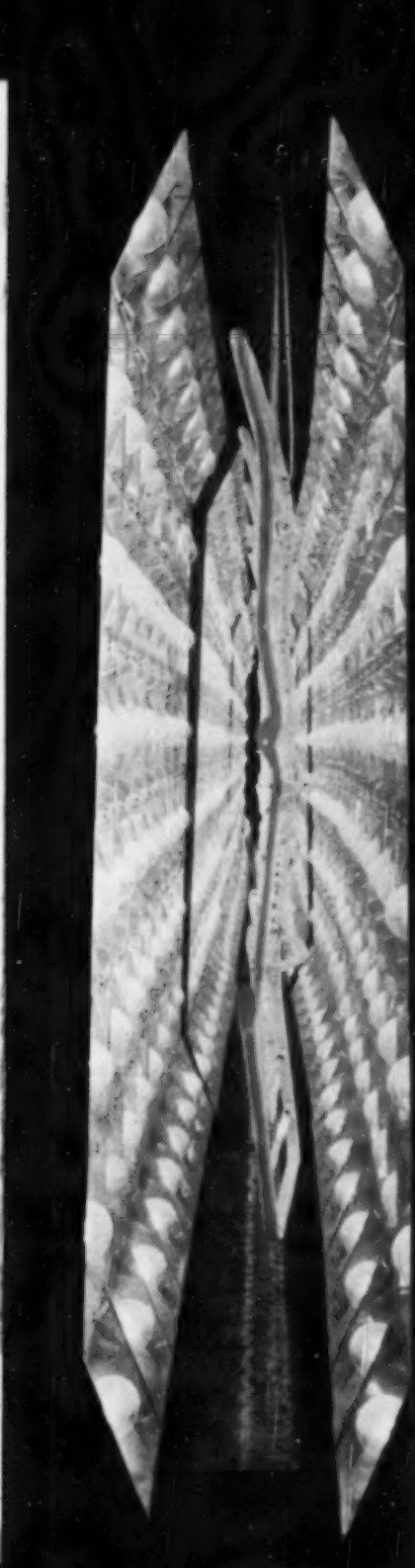

The average time required for infra-red degreasing is 2½ minutes. A little extra conveyor time must be allowed for the product to cool down if painting or assembly operations are to follow. One or more ventilating fans can be used to help cool the products as they leave the degreasing oven.

Because of the intensity of heat used in an infra-red degreasing oven, and the short time cycle, such ovens are usually relatively small in size and they occupy small floor areas.

For Some Jobs, it's OK
For Others, it Isn't

It is a foregone conclusion that a qualified infra-red engineer will turn down many products as being unfit for or unsuited to infra-red degreasing. Infra-red was never intended for or developed to be a cure-all for degreasing problems; it was never meant to compete with all chemical degreasing systems.

Cases have been found where an infra-red degreasing system was selected because of certain characteristics of the product itself. One example is tubular products closed on both ends, but with holes or perforations between the extremes. Liquid cleaner would fill the tubes and require draining.

Flat or slightly contoured sheet metal surfaces are generally considered the best types of products for infra-red degreasing. Products with deep crevices or areas that can not be radiated directly by the infra-red rays are generally considered unlikely prospects for infra-

The illustration at left shows chair frames moving through an infra-red baking oven.

red degreasing. However, about the only way to determine definitely the possibility of utilizing infra-red for degreasing is to submit the product for test. If a uniform temperature of about 550° F. can be reached in the product, then infra-red degreasing can usually be employed.

Distortion of Thin Metal; Removal of Residue

Is there a problem of distortion in a metal product, when elevated temperatures are employed to remove surface oil or grease? Actual experience has shown that assembled products, such as sheet metal boxes or cabinets, do undergo some distortion during the heating period, but they revert to their proper shape during the cool down period. Apparently, the distortion problem is one that occurs only in box-shaped products made of light-gauge metal.

Some types of heavy drawing compounds also present a problem for infra-red degreasing, but here again the answer, as to its adaptibility, can be had only by submitting the product for testing.

What about residue left on the product when it comes from the infra-red degrease oven? And how is it removed? Good questions. First, the amount of residue left on the product depends on the type of oil or emulsion used on the metal. A light coating may burn-off so completely that any residue left may be negligible, or what little dry powered residue is left can be removed by a blast of air or hand wiping.

Removal of any small remaining residue depends somewhat on the product and the finishing standards set up for it; also upon the thickness of the paint film. It is believed that small amounts of residue left on the surface may be absorbed by a heavy coat of paint without showing any roughness after the paint is baked.

When a manufacturer using an infra-red degreasing system decides in favor of hand wiping for removal of small amounts of residue, it is usually found that the job can be done quickly at low cost, and that this cost is offset by other savings.

Complete Conveyorization of Cleaning-Finishing Setup

Once a metal part or product is ready for the finishing room, handling can be reduced to a minimum from there on. Products can be put on the conveyor for consecutive op-

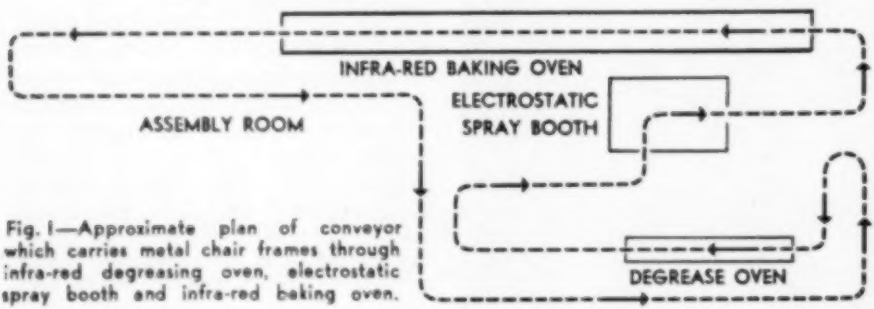

Fig. 1—Approximate plan of conveyor which carries metal chair frames through infra-red degreasing oven, electrostatic spray booth and infra-red baking oven.

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erations of infra-red degreasing, cool-down, spraying (manually or automatically), paint baking, cool-down and packing or final assembly. The entire setup can be completely conveyorized.

Tubular Frames for Chairs; No Residue Wiping

A common adage is that, "the proof of a pudding is in the eating;" and the merits of any industrial process lies in its effectiveness and economy for the users. When they endorse it heartily it is usually worth investigation. Let's look at some records.

Barcalo Mfg. Co. at Buffalo, N.Y., was one of the first concerns to use infra-red for degreasing, as well as paint baking, for its product. This firm manufactures adjustable chairs, the frames of which are made of tubular steel. Here is a case where liquid cleaning presented a problem of extra handling, etc., for draining liquid from the tubes. The drawing marked Fig. 1 shows the floor plan for all finishing operations at Barcalo.

One of the photographs with this article shows an end view looking into the infra-red degreasing oven. The temperature of metal frames going into the spray booth is still at 145° F., and there is excellent adhesion of paint to the metal.

Degreasing time here is 2½-minues. Baking time for the finish in the larger infra-red oven is 8½-minutes. Removal of any residue by hand wiping is not resorted to at Barcalo. White enamel is used and an excellent job is achieved.

Utility Cabinets Cleaned, Wiped, Sprayed, Baked

The Lee Metal Products Co. at Baltimore, Maryland, presents another case for inspection. This company manufactures a line of utility cabinets, in sizes of 12x18-in., 20x 24-in., 24x36-in., and some of them 66-in. high. [*Continued on page 28*]

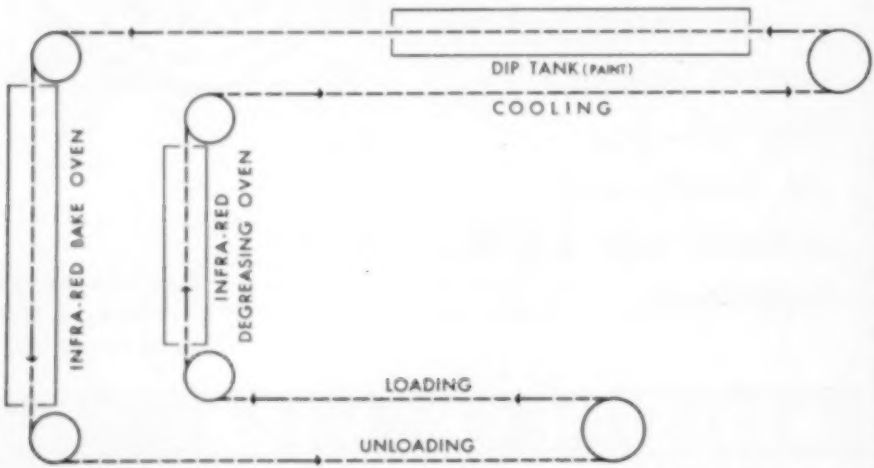

Fig. 2—Plan of conveyorized setup which includes degreasing, paint dipping and baking.

"Paw was so taken up with Ferro's new Hammeroc Finish on them gadgets, he bought Lem Hawkins out."

Everyone is enthusiastic about Ferro's easy-to-apply Hammeroc Finish! Produced with a single spraying, this exceptional hammered finish holds a uniform pattern on pieces of any size—no splatter coat, thinner or special spray gun is required. Hammeroc provides excellent coverage and superior hiding properties in a wide variety of colors. Too, heat-resistant Hammeroc is available for special applications. *Baking Time:* 20 minutes at 300° F—optional schedules available for special requirements.

Remember, Ferro Is Set Up to Provide Complete Organic Coatings Service. From the Development of Diversified Protective Coatings . . . to the Designing and Installing of Efficient Finishing Oven Systems.

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Vedoc

Recently an industrial management engineer visited the Lee Metal Products Co. factory to inspect its infra-red degreasing oven in particular. He had the following to say in an unsolicited letter: "I had some special pride in seeing this opration because, almost from the inception of infra-red lights in industry, I have suggested that they might be useful in degreasing metal. I was impressed with the effectiveness and low cost of this method . . . Little floor space is required, conveying of material and parts through the oven is a simple matter, the time element is short, and there are no liquids to heat, apply and remove. The metal surfaces are immediately dry for the paint booth, except for a quick wipe-off of residue. One woman wipes off the entire surface of a large cabinet between the degreasing operation and the paint spray booth.

"I was told, and have reason to believe, that the company has been able to reduce the cost of its product from over fifteen cents to less than eleven cents per unit on this particular operation, in spite of the fact that Baltimore has a high electric rate for industry."

The degreasing time at Lee Metal Products is two minutes and 12 seconds. Actually, on this job the cabinets are "blued". Finish on the cabinets is baked in another oven for approximately seven minutes. Here is a case where the product is distorted slightly during the degreasing operation, but it returns to shape during the cool-down.

The Automotive Stamping and Mfg. Co., Detroit, Mich., recently installed a completely conveyorized system for finishing electrical outlet boxes. The conveyor system, two infra-red ovens, paint dip tank, and plenty of floor space for storage requires only 17x31-ft.

Degreasing is done in three minutes in a 6½-ft. oven. After degreasing the boxes are dipped automatically into a paint tank and then pass through a second infra-red oven (11-ft. long) for a baking period of five minutes. The same worker that places the products on the conveyor removes the finished products later.

Packaging Exposition, April 24-27, Navy Pier, Chicago

The American Management Association, 330 W. 42nd St., New York 18, N.Y., has announced the schedule of events it will sponsor at its 19th National Packaging Exposition at the Navy Pier in Chicago, April 24 to 27. At the same time the Association reports that more exhibit space for the 1950 packaging show had been contracted for to date than the total of all space at the 1949 show.

The Exposition is the annual market place for machines, equipment, materials, supplies and services for packaging, packing and shipping in all industries.

H. R. Bennett, Mgr. of Ind. Sales for Thresher P. & V. Co.

Appointment of Harold R. Bennett as manager of industrial sales for Thresher Paint & Varnish Co., is announced by Herschel E. Post, general sales manager of industrial finishes for Pittsburgh Plate Glass Co. Thresher Paint & Varnish Co. is a Pittsburgh affiliate.

Associated with the industrial finish industry for more than 25 years, Mr. Bennett has been with Thresher since 1930. He has served in various manufacturing, laboratory and sales capacities. As manager of industrial sales, Mr. Bennett will have headquarters at Dayton, Ohio.

DEGREASING—PAINT BAKING

Both Done on One Conveyor Line with INFRA-RED Evenray SYSTEM

55% savings in production cost, at Automotive Stamping and Manufacturing Co. of Detroit, is typical of the advantages of a combined Infra-red degreasing and paint baking system. Here, the product moves on a conveyor through degreasing oven (3 minutes), on to paint dip tank, and then through baking oven (5 minutes). One man handles both placing and removing product on conveyor. For faster, better, lower cost production, Infra-red Evenray Systems provide astonishing utility and efficiency. Information on the experience of many plants is available for your consideration.

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FOSTORIA, OHIO

Oldest and Largest Manufacturers of Industrial Infra-red Ovens

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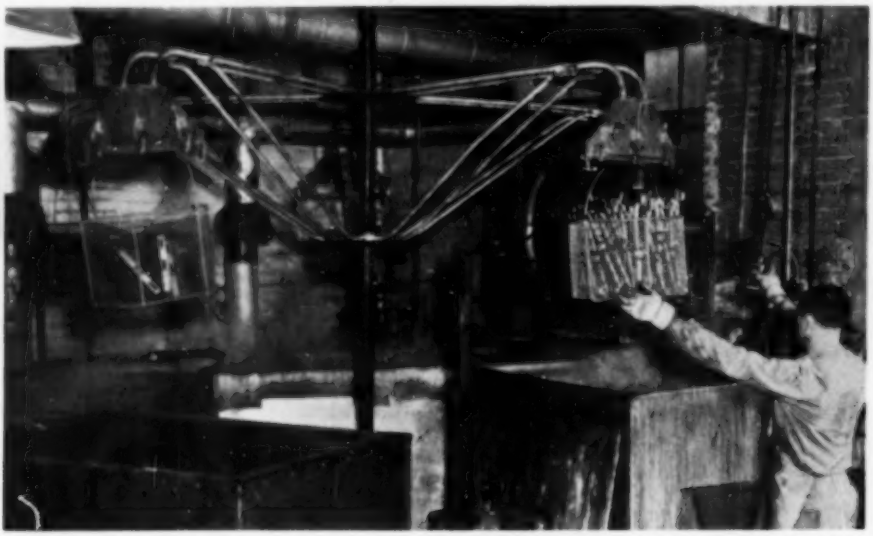
Technical information and literature available on request. WRITE NOW. Learn how EVENRAY can aid your production.

☆ Cleaning and Painting

Two merry-go-rounds are utilized effectively to move large items and baskets of small parts, from tank to tank, and to lower and lift these loads into and out of each tank in the cleaning and drying setup at this plant. Dip coating, flow coating and infra-red oven drying follow in routine order.

INGENUITY and skill on the part of its own engineers and the maintenance department at Viking Air Conditioning Corp., Cleveland, Ohio, have evolved several interesting and economical cleaning and painting procedures. Since its inception in 1935, this firm has risen from a minor role in the national output of warm-air furnace blower fans to that of the supplier of one-third of such products for other manufacturers and jobbers.

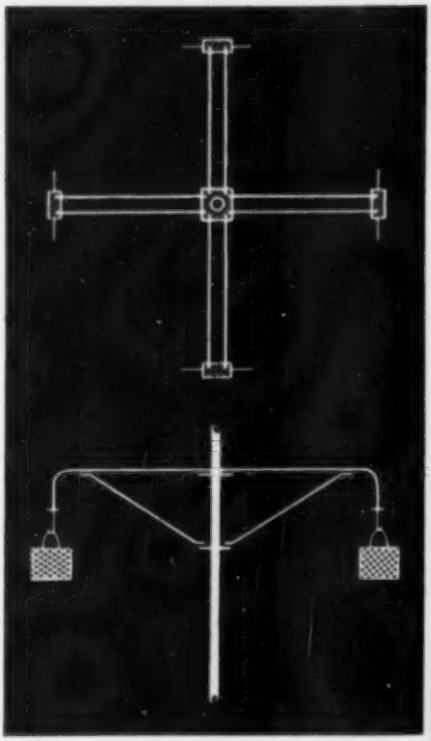
In addition to making blower units, the company produces a "package" of blower, motor, filter and controls, for conversion of gravity type warm-air furnaces to forced-air type. Automatic, pan-



"Merry-go-round" (five arms) in "up position" at 5-station (four tanks and loading arm) cleaning area. Operator's right hand is on push-button controls for raising the arms.

Air-Conditioning Equipment

By Walter Rudolph



filled humidifiers and window fans for domestic and commercial use are also fabricated and finished in many sizes. Year-round, "balanced" production of these seasonal products makes for steady employment and good personnel morale, hence increased efficiency on the part of the workers.

Two Merry-Go-Rounds for Cleaning and Drying

Only two workers are required to handle all the cleaning operations, including drying. Each one runs a semi-automatic "merry-go-round" setup that requires only unloading and loading of baskets or brackets, which convey parts through cleaning and drying operations. The two "merry-go-rounds" have a potential capacity of about 800 furnace blowers daily on an 8-hour shift.

Each "merry-go-round" is virtually what the name implies. Baskets and brackets are suspended from arms fabricated of one-inch steel pipe and braces, and the entire rig stems from a two-inch hollow center pole that is manually revolved. Heavy lifting on the part of a "merry-go-round" operator is eliminated, because the loaded arms are raised and lowered by an electric, reversing motor.

This motor, about one horsepower but working through reduction gears, is mounted above and to the rear of the "merry-go-round" stations, each of which has its own power unit. Push-button controls hang within easy reach of each operator.

Sprocket wheels off the reduction gears engage a double sprocket chain that is attached to the top of the center pole of the "merry-

go-round", to raise and lower it as required. This center pole is perfectly aligned by sliding up and down over a floor-based pole of smaller diameter.

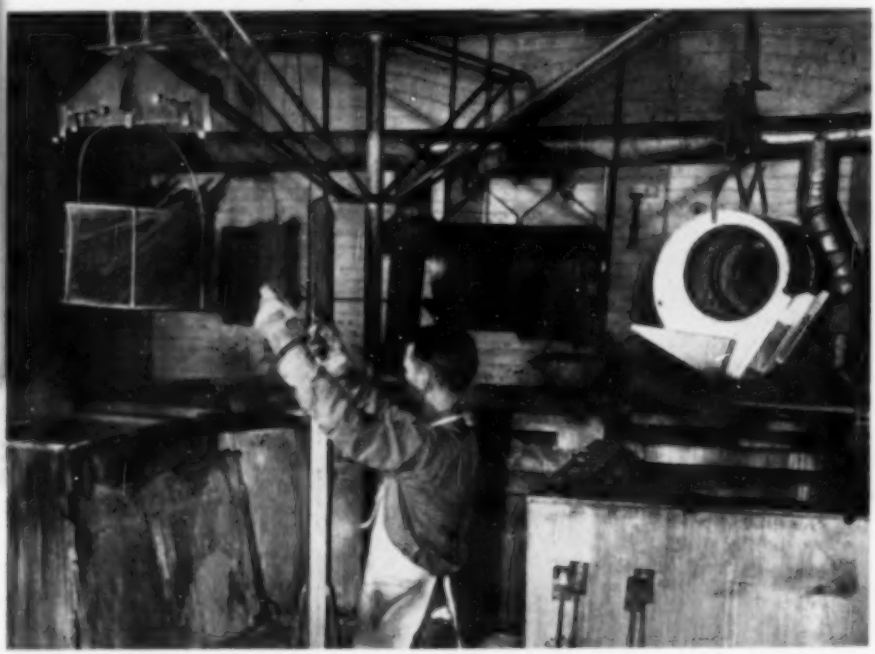
Sequence of Cleaning and Drying Operations

Of course the loaded arms of the "merry-go-round", in each instance, let parts down into the cleaning and drying tanks, and then lift them out again. At one "merry-go-round" four tanks are set, fan-wise, around the center pole and equi-distant from it. Each tank has a capacity of some 430 gallons, although all of them are not full.

All told, the first "merry-go-round" has five arms, one of which is unloaded and reloaded, while the other four are in process around the cleaning setup. The complete cleaning cycle takes about half an hour, allowing five-minute intervals between raising and lowering of the "merry-go-round" arms, and rotation of the rig.

In the four-tank setup, the first tank contains a hot alkali cleaning solution (about 210° F.) which is constantly agitated by a plant-contrived device. The level of this solution is kept constant by an automatic float-valve arrangement; as water is evaporated or dragged out, more water is let in automatically.

To keep the alkali solution at a constant strength, the operator adds up to 10-lbs. of alkali cleaning



View of another "merry-go-round" (four arms) with only three tanks and one loading area. This cleaning setup, with the last tank being used as a drier, was made at Viking.

Highlights on

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When oven capacity is limited—Use NU-SYNTOL

One Coat baked only 10 minutes at 250° F. will impart a full high gloss white finish on smooth metal.

The protective coat of NU-SYNTOL will resist the action of—

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Speed-up production with NU-SYNTOL—this low-heat, quick baking synthetic gives excellent results.

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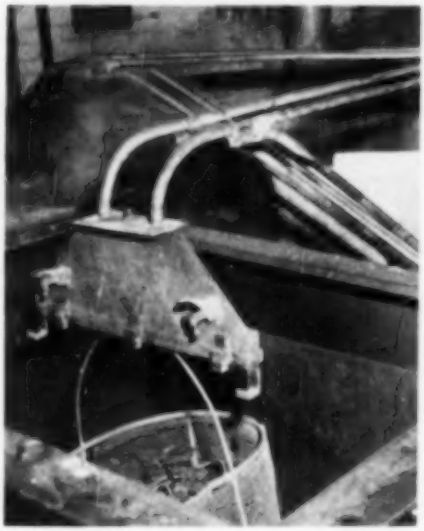
powder daily, depending upon the number of parts being cleaned. Second in line around the "merry-go-round" circle is a hot rinse; the third tank is another rinse, and the last tank is the drier. A dozen gas burners, such as you might find on a domestic hot plate, are spaced around the floor of this drier tank, and the heat from these burners dries the cleaned metal parts.



Close-up, showing welded fabrication of the "merry-go-round" arms, and a basket of parts being lowered into drying tank.

Heat in the drying tank can be regulated, merely by controlling the volume of gas burned. The heat is increased when a large volume of small pieces are being cleaned. When the "merry-go-round" removes a basket of parts from the heat, it is allowed to cool until it can be unloaded without discomfort by the gloved operator.

Removal of Fumes from Cleaning Tanks

Fumes are exhausted from individual tanks, as required, by duct work. A large wall fan also exhausts steam and fumes from the general cleaning area around each "merry-go-round".

The "merry-go-round" installations required no elaborate preparation of the factory floor, as they simply rest on heavy sheet metal squares, about 25x25-in., with drains to take care of spillage and cleaning maintenance.

Construction of the basket-holding brackets that are suspended from the end of each "merry-go-round" arm is noteworthy. They feature welded fabrication of heavy steel plate and strap steel, and have a triangular outline. The small projections of strap steel are bent at right angles to provide hooks for baskets of parts and/or individual large parts, such as blower cabinets. Quick-action toggle clamps are incorporated to assure positive hold on large parts.

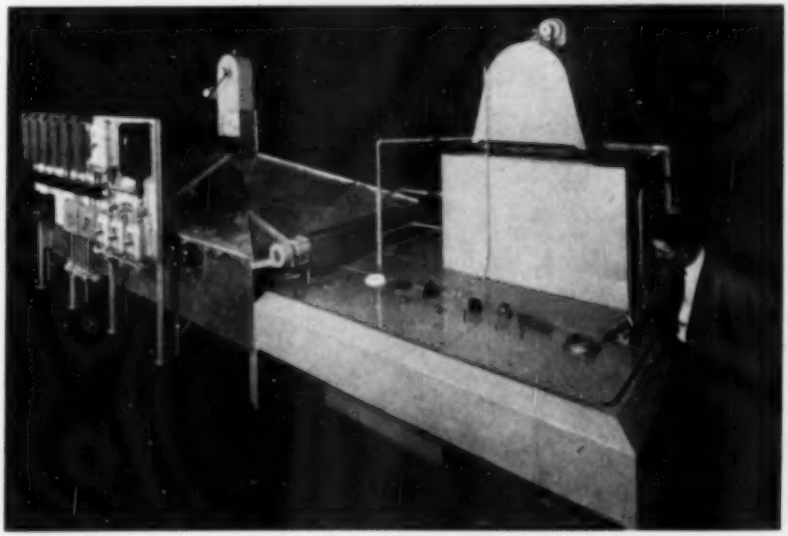
Dip Coating; Oven Drying; Safety Features

When the parts are cleaned and dried they are moved to the paint department for spraying, dipping or flow coating. Only the larger blower cabinets are sprayed in two small spray booths. They get one coat of high-gloss enamel mixed in the proportion of two to one with naphtha. Painted cabinets are manually transferred to a conveyor (3-ft. per minute) for passage through an 11-ft. infra-red oven wherein the heat is about 290° F.

(Continued on page 37)

LOWER YOUR SPRAY-BAKE COSTS

by finishing small pieces (compacts, clocks, pens, etc.) in large quantities, in any shape, on this Capitol High Speed Electric Spray-Bake Conveyor Equipment. Prominent manufacturers of clocks, automotive parts, hardware, compacts, pens, pencils, lipsticks, etc., are among the many satisfied users of Capitol Machines, Models B, C and D, one of which is pictured below.



Shown on working bed of machine are: clock casing, pencils, toy train, motor housing, dial ring, and door knobs—a few of many items which can be spray-bake finished.

Here's How: Speedy production—Over 200 pieces per minute. Small space required—as little as 6′ x 18′. Quick change adjustments—only 10 minutes! Machine cost recovered in few months by actual case histories. Absolutely uniform quality controls.

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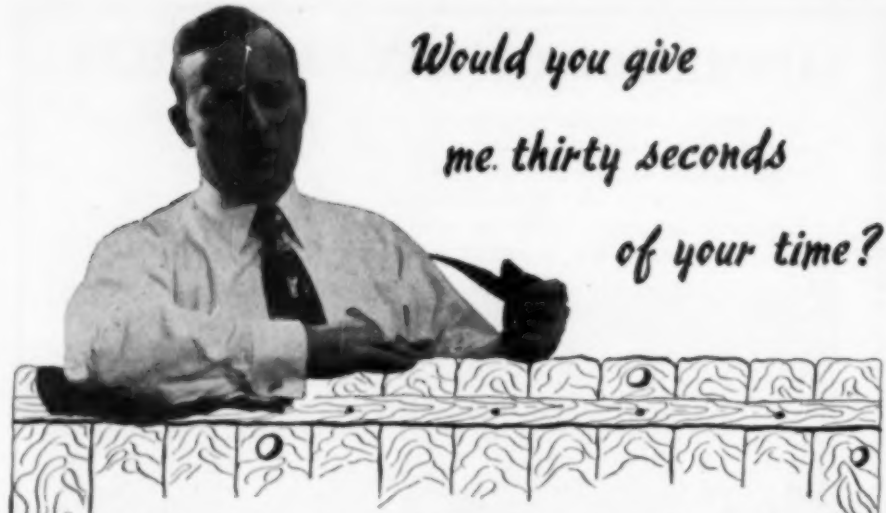

Would you give me thirty seconds of your time?

Allow me to introduce myself. I'm Ev Hawthorne, Egyptian's Advertising Manager. I'd like to bring you a message about an *old* Egyptian product.

The material is Egyptian's zinc chromate, synthetic type primer, 1-PA. It may seem funny to be introducing a product that is over ten years old, but 1-PA has had, during that time, such an impressive record of acceptance among so many of America's leading manufacturers that we feel all of you should become familiar with it.

Of course, it would be foolish to say 1-PA can do every priming job that comes down the pike, but we have seen very few instances where it did not do a magnificent job of protection against corrosion, or chemical attack.

This extremely tough, durable undercoat may be just what you need to give your product longer life and contribute a great deal to a more attractive appearance. Won't you inquire?

The Egyptian Lacquer Manufacturing Company
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Please forward further information on primer 1-PA.

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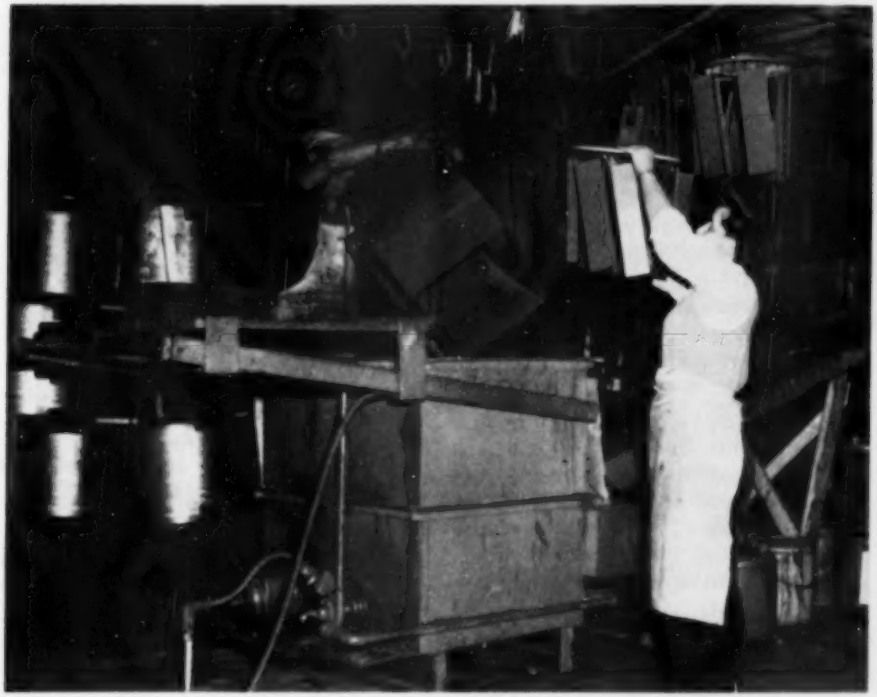
EGYPTIAN
INDUSTRIAL FINISHES

Lafayette, Ind

A specially-prepared enamel is used in the 130-gallon dip tank which was constructed by Viking to meet its own particular needs. This paint is mixed half and half with naphtha to facilitate speedy dipping. Parts are manually dipped and hung on a conveyor that carries them over drain pans to an overhead infra-red oven. Paint that accumulates on the drip pans runs down to a small trough in front of the dip tank. As this trough slowly fills, a small electric motor is turned on to pump the paint back into the dip tank.

To keep the contents of the dip tank constantly agitated, compressed air enters at the tank bottom, causing the paint to bubble slowly but continuously.

Still another innovation contrived here is a "fire-cover" for the dip tank. Ordinarily it rests on an angle-iron incline at one side of the tank, and is used as a temporary table on which parts are placed before dipping. Through a system of pulleys and a thin chain, this heavy cover is held from sliding over small rollers onto the dip tank. But included in this holding chain



This hand dipping tank has a safety fire-cover, a small pump for returning drippings to tank, and air-bubble agitation of material in tank. At left, a blower housing has been dipped and is being hung to conveyor. At right is take-off station from the return line.

and directly over the tank, is a small strip of fusible metal that will quickly melt and "let go" if a fire occurs in or around the tank. Then the fire-cover will slide into place on top of the dip tank.

Dipped parts enter a 30-ft. overhead infra-red oven, after the 50-ft. trip from the tank, and are baked at about 285° F. Then they travel about 80-ft. past several take-off stations as they cool. At the first station, a short distance from the oven, sufficiently cooled parts (according to their size and bulk) are removed.

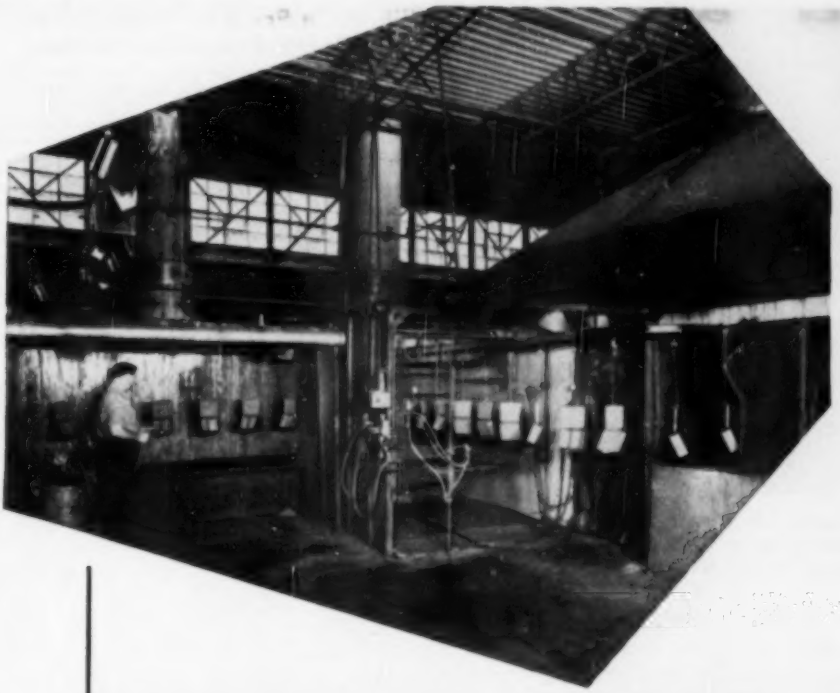
Flow Coating Setup; Infra-Red Drying

The setup just described leaves irregular vacant areas on the conveyor, and Viking has set up a small lacquer flow-coating station, a few feet beyond the first take-off station, to take advantage of and fill the empty conveyor hooks. The flow-coating facilities include an ordinary 50-gallon drum, cut in half to provide a tank. A small water pump draws lacquer from the tank and flows it back into the same tank from a ½-in. pipe.

A sheet metal splash guard extends around the top of the flow tank. Most of the flow-coated parts are covers and bottoms of the Viking humidifier. The operator places each item on a stiff wire hook, suspends it momentarily under the flowing paint, and then hangs it onto the overhead conveyor.

After traveling by conveyor for a short distance, during which time excess paint is caught in drip pans, the flow-coated parts (along with whatever items remain on the conveyor from dipping) angle upward past opposite banks of infra-red lights, spaced about one every foot for 7-ft. This infra-red lamp setup provides just enough heat to "set up" the flow-coated parts. The conveyor then moves all parts to the last take-off station which is near the dipping tank. [*Cont'd on p. 40*]

Small lacquer flow-coating station, with humidifier cover about to be hung on conveyor "dead" hooks—about midway in the trip from infra-red oven to final take-off. Infra-red lamps, above, set up lacquered parts for remainder of the conveyor trip.



Hand Touch-Up *Does* Pay Off...

One man handles the entire painting operation at Ohio Can and Crown!

Most of this lunch-box is *automatically* sprayed with Ransburg's Electrostatic Process . . . the "shielded" *interior* only is touched-up by hand.

This combination has been paying off for many months by creating new business—through savings passed on to customers.

"Formerly a highly experienced sprayer could produce 500 boxes per *day* with about 15% rejects. Now, *one man turns out 500 per hour* with practically no rejects and greatly improved quality," reports Ohio Can and Crown.

And Electro-Spray efficiency saves other ways, too—$264 a month *on booth clean-up alone*, for example

Maybe you also can obtain a worthwhile competitive edge with Electro-Spray. Why not write Ransburg today—outlining your requirements.

RANSBURG ELECTRO-COATING CORP., Indianapolis 7, Indiana

Peeling off the plastic coating from interceptor panels of spray booths after they have become heavily coated with overspray.

A last item of interest: Viking coats the overspray panels in its spray booths with a plastic peel-off film. Formerly it required more than a day's work for one man to remove the overspray paint from these panels, but with the plastic film, which peels off with the overspray paint, the job can be done quickly.

American Air Filter Co., Inc. and Herman Nelson Corp. Merged

The merger of American Air Filter Co., Inc., Louisville, Ky., well-known manufacturer of air filters and dust collectors, and Herman Nelson Corp., Moline, Ill., one of the oldest names in quality heating and ventilating equipment, became effective as of January 6, 1950, according to an announcement made by W. M. Reed, president of the American Air Filter Co., surviving corporation.

The Nelson Corporation henceforth will be operated as the Herman Nelson Division of American Air Filter Co., Inc., and will continue to maintain its headquarters and facilities in Moline. The merger company's principal offices and headquarters will be in Louisville, Ky.

DeVilbiss Men Promoted to Higher Executive Positions

Promotion of five DeVilbiss executives has been voted by the Board of Directors and announced by Howard P. DeVilbiss, president of the company, which manufacturers spray painting equipment including booths, machines, hose, air compressors.

Effective Jan. 1, William A. Delger, former plant manager, became vice president in charge of manufacturing; Don J. Peeps, chief engineer, was advanced to vice president in charge of engineering; John M. Robinson, treasurer, was elected vice president and treasurer; Frank R. Pitt, the company's legal counsel, was named secretary, and R. Miles Booth, member of the treasurer's staff, was appointed assistant secretary and assistant treasurer.

Upper left: Don J. Peeps.
Upper right: Wm. A. Delger.
Lower left: John M. Robinson.
Lower right: Frank R. Pitt.

Mr. Delger joined DeVilbiss in 1946, after service with an eastern firm as a consulting management engineering supervisor. Mr. Peeps entered the company's employ in 1928 as a factory worker, becoming chief engineer in 1944. Mr. Robinson joined DeVilbiss in 1946 as treasurer, with a background of factory accounting and public tax and accounting work. Mr. Pitt is legislative chairman of the National Paint, Varnish & Lacquer Ass'n.

Introducing . . .

THERM-O-SPRAY

FOR HOT SPRAY PAINTING

A Simple and Effective Attachment

SAFE—GUARANTEED—DURABLE

U. S. PAT. PENDING

- INCREASES PRODUCTION
- PRODUCES BETTER FINISH
- CONSTANT TEMPERATURE
- PAYS FOR ITSELF
- EASY TO CLEAN
- NO MOVING PARTS
- NO ELECTRICITY IN PAINT HEATER

Years of research have developed this revolutionary design. THERM-O-SPRAY has been in production use since 1945. It is a valuable complement to your regular spray painting equipment.

Sole Agent in U. S. A.

DOUGLAS WILSON & Co., INC.

101 PARK AVENUE - NEW YORK - 17 - N.Y.

Now this table loves wet glasses! The Problem: Furniture manufacturers wanted a way to keep wet glasses from ruining furniture finishes and leaving white rings.

The solution: Industrial Finish Engineers were called in. Developed a special finish that not only laughs off water stains, but also resists heat, abrasion, alcohol and food stains. As a result, furniture makers have an extra selling point—a better product.

The better the finish - The better the buy!

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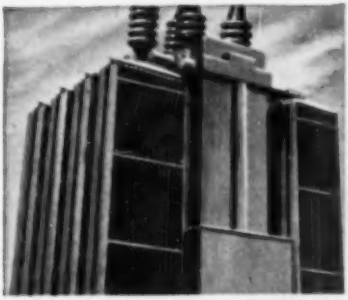

Problem: Makers of electrical transformer boxes wanted a finish that would withstand heat of molten asphalt mixture used to anchor electrical elements in place.

Solution: Industrial Finish Engineers developed a finish that not only withstood this heat, but was also durable, good looking.

Problem: To find a finish that would protect cars from weather, corrosion, and be applied quickly.

Solution: Industrial Finish Engineers were called in. Developed a finish only three-thousandths of an inch thick that resisted the elements—could be applied fast—dried fast—was durable.

Problem: To develop a colored coating to be applied to plastic articles.

Solution: Industrial Finish Engineers developed a special enamel finish. Manufacturers can now make a single run by coloring the plastic with the application of a new enamel in many colors.

Improve your sales through Engineered Industrial Finishes!

On this page are some examples of the way Industrial Finish Engineering can cut manufacturing costs and improve the selling features.

What can it do for your product? To learn the answers, consult with an Industrial Finish Engineer. For the Finish Industry has technical ability to make finishes equal to the purpose for which each product is bought. Remember, most of your customers *start buying with the finish in mind.*

Iridescence

IN LACQUER FINISHES

What iridescence is (glittering changing colors) and where and how to produce iridescent effects for the beautification of luster-finished products for sale.

PROBABLY no decorative finish is so desired as that bearing iridescent colors. It may not be too optimistic to predict now that such finishes will be available for practicable production in the near future. I propose to present here a definition of iridescence and a brief outline of some techniques used for the production of iridescent finishes, and to outline certain methods now being developed that hold promise of considerable improvement for future production.

The term "Iridescence" is frequently used in descriptions of lacquer and enamel finishes. That it is so frequently used incorrectly reflects the fact that the phenomenon of iridescence is not generally understood.

An academic definition of the word, as given in the Shorter Oxford Dictionary, is: "The quality of being iridescent; the interchange of colors, as in the rainbow, mother of pearl, etc.; a play of glittering and changing colors."

Let us turn to Nature for a demonstration of iridescent colors. Some of these are of a high degree of brilliancy and have engendered considerable controversy among physicists. Take, for example, the colors of a butterfly. In many instances these colors are due to the presence of pigmentary substances. In all cases, however, where butterflies show blue colors, these colors are produced as a result of light interference.

If a strong light be directed through the wing of a butterfly and reflected from a screen behind it, the light so transmitted and reflected on the screen will show red, if there is red pigment in the wing. If this same treatment is accorded

By WILLIAM E. DECKER, Technical Specialties Company

a butterfly wing that shows blue colors, these blue colors are absent on the screen.

This comparison made by using transmitted light demonstrates the fundamental distinction between colors due to pigments and those due to interference.

Now if the wing that reflects blue colors from its surface is wetted with a liquid of equivalent refractive index (for example, benzene) the blue colors entirely disappear only to reappear as the benzene evaporates. The combined action of the reflection from the front and back surface of a thin film results in the iridescent color. The thickness of this film (representing the distance between front and back surfaces) must be of the same magnitude as the wave length of the light transmitted through it. Such a combination of conditions causes light interference and produces colors defined as iridescent.

How Light Strikes it Affects Color Appearance

One eminent physicist (Professor Michelson) has taken the view that iridescent colors are of the same nature as the surface reflections of aniline dyes. These surface colors are quite peculiar and in no way resemble the colors shown by transmitted light. Anyone who has used the ordinary violet ink of commerce may recall the brilliant yellowish green reflection that appears on a heavy dried blot of this ink. However, the color seen by transmitted light is violet.

This is not the place to delve into the physics and optics involved in explaining iridescence. I have endeavored to make clear that iridescent colors are not pigmentary, that is, not produced by the presence of certain chemicals.

It is easy to recall the exhibits of iridescence that appear on pavements during and after a rain when a film of oil spreads over a little pool of water. One may perform a simple experiment with oil and water that demonstrates that the iridescence is not apparent to the unaided eye until the oil film is of the proper degree of thinness.

Place a small puddle of water on a level surface (if this surface is black the colors show up more brilliantly). Then, with a pipette, flush a quantity of oil on the water. While the oil film is relatively thick (with reference to the wave length of light) no iridescence is apparent. Gradually flow more water into the pool thus expanding its size. As the oil film spreads out over the area of water it becomes thinner and thinner. At the point where the oil film attains the proper thinness, iridescence will appear.

Iridescence in Colors on Lacquered or Enameled Surface

Can iridescent colors be produced on lacquered or enameled surfaces? The answer to this is "yes"—when certain techniques are followed. Iridescent papers and beads have appeared occasionally on the market, but the limited quantity attests the technical difficulty encountered in their manufacture.

The procedure generally adopted is to apply a clear lacquer (nitrocellulose) and when the film has thoroughly dried, polish it with a bismuth salt, preferably bismuth oxychloride. This acts as a mild

abrasive and in addition some of the salts become imbedded in the lacquer film causing some light interference.*

Some indication of iridescence may appear at this stage, depending probably upon the thickness of the lacquer film and the reflective power of the underlying surface. The final step is to superimpose a very thin coat of a lacquer made from a different base than that in the underlying film. If the primary film be made from nitrocellulose lacquer, the secondary coat may be made with an ethyl cellulose or acrylic lacquer. The diluent in the latter should be a high-boiling point solvent, such as amyl acetate.†

Technique of Finishing To Make Iridescence

Another technique that has been used for dipping small objects such as buttons or beads, is to superimpose a solvent lacquer film on top of an aqueous one. A solution of gelatin (aqueous) of a viscosity equivalent to that used for a dipping lacquer is placed in a bowl and over its surface a small quantity of a very dilute nitrocellulose solution is poured. This nitrocellulose solution should be made with a considerable portion of its solvent ether (di-ethyl).

It is necessary to make a number of experimental tests to ascertain the correct amount of the lacquer to be poured on top of the gelatin solution. The film must be as thin as possible and still remain continuous, and the film must not dry while it is floating on the gelatin in the bath. The button or bead is quickly immersed into the double layered bath and withdrawn in such a manner that its entire surface will be covered with a double layer—the underlying one being gelatin and the top layer nitrocellulose. When dry, a certain percentage of the objects so coated will display iridescence.**

Pearl essence lacquer finishes are often referred to as possessing some degree of iridescence. Here, presumably it is a question of definition, but I have never in 25 years of experience handling Pearl Essence, seen any that displayed true iridescence. Of course, one occasionally sees a small area of dried pearl lacquer film that shows some fugitive iridescent colors, but this is probably due to the accident of the lacquer film forming in such a manner as to produce light interference and the colors, are in no sense a property of the pearl essence crystals.

Treatment of Plastics to Suggest Iridescence

A number of patents have been granted covering procedures for the preparation of crystals that will iridesce when incorporated into plastics. These include the preparation of specially formed basic lead carbonate crystals (Ger. No. 676,889, 2/18-1936) and fine crystals of lead phosphate (Ger. No. 668,113, 5/12-1934 and No. 647,452, 6/17-1937) which are introduced into viscous masses of plastics, such as casein, cellulose acetate, etc.

About the best that can be said for these crystals is that when very carefully prepared they present a

*See comment at end of article.
†See comment at end of article.

** See comment at end of article.

MEMO

For a rich, durable finish you can't beat . . .

RANDOLPH
ONE COAT BAKING
TEXTURE ENAMEL

(Available in wide range of colors)

These fine Randolph Texture finishes — known for their uniformity — can be used over rough castings, plain and polished metal — or on any surface that will stand baking.

No surface preparation required. These finishes will cover all imperfections.

The services of our skilled technicians are always available to help you get precisely the form and size of design that you require. Submit your problem. Without cost or obligation to you we will be glad to make recommendations.

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PRODUCTS COMPANY

Carlstadt, New Jersey

DOPES · LACQUERS · ENAMELS

pearly appearance, and when incorporated into the plastics they cause just enough light interference to suggest iridescence, rather than any well defined colors. The operation of forming these crystals is such a delicate and sensitive one that commercial production would be difficult.

Paper Coatings That Aim to Give Iridescent Effect

There have been on the market papers and small objects coated in a manner that they display variegated colors which may pass for iridescence to the casual observer. These effects are produced by the technique of flowing small streams of diluted pigment dispersions on to a surface, simultaneously. For example, a dilute solution of red, blue, green and yellow pigments or soluble dyes may be simultaneously flowed across a sheet of paper and allowed to dry. Then the surface is coated with a thin spray of clear lacquer or shellac to serve as a fixative. Some rather striking effects can be derived in this way, but the result is not true iridescence.

True iridescence can be obtained on glass and ceramic objects by exposing them to fumes of titanium tetrachloride, antimony trichloride and such compounds. The object so exposed to these fumes must be subjected to relatively high temperatures. This method may be referred to as the sublimation process and it forms the basis for much of the research now being carried.

Efforts are being made to treat stable crystals with the fumes of certain chemicals by sublimation. The intention is to make these crystals highly iridescent in themselves so that they may be dispersed in very dilute lacquer vehicles which will dry with a film strong enough to hold the crystals in the surface, and thin enough to not obscure the iridescence of the crystals.

Anyone desiring to explore more fully the true nature of iridescence will find the papers of The Right Hon. Lord Rayleigh most interesting. I especially recommend the one titled "IRIDESCENT COLOURS IN NATURE FROM THE STANDPOINT OF PHYSICAL OPTICS." (1925)

EDITOR'S NOTE: Men well qualified to write on a subject, perhaps through years of practical experience in that line, often hold to slightly different opinions or theories in regard to certain details—and even sometimes to the main principles of a subject—therefore the Editor occasionally refers an unsigned copy of an article to one or more other men for their suggestions or comment. In reference to the foregoing article on Iridescence, another man's comments about three indicated paragraphs are as follows:

*Most pearl people put on a coat of cellulose acetate first, then polish with bismuth oxychloride and follow up with a thin nitrocellulose coat.

†Amyl acetate is an excellent solvent for nitrocellulose, so it would dissolve the nitrocellulose film and destroy any iridescence that may have appeared. If this procedure is followed the solvent used should be one that will have no effect on the nitrocellulose coat.

**The two preceding paragraphs are something new to me. I have never seen this done and it would be interesting if iridescence could be produced in that manner. As is pointed out, it requires considerable technique, so this is in no way any criticism of Mr. Decker's findings.

Join This Growing Army . . . now!

HITCH YOUR FUTURE TO BROLITE SUCCESS!

Brolite has just added two new factories and is now "invading" dozens of new territories! New salesmen are needed to help carry tested and successful products into these new, wide open areas.

SUPERIOR PRODUCTS KEEP BROLITE SALES SOARING!

Q. D. SYNFLEX, CLEAR AND COLORS, SETS NEW AIR-DRY SPEED RECORDS: Products are out of dust in TWO minutes, can be handled in FIVE and packaged in thirty!

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BROLITE FLASH BAKING ENAMEL and SPEED BAKE WHITE EXCEL IN ADAPTABILITY: Superior adjustment to the precise needs of exacting production lines are resulting in unparalleled acceptance.

REMEMBER:
Brolite has been making only quality finishes for exacting users for over a quarter century!

Write to the Nearest Factory Today!

ANDREW BROWN COMPANY

1223 East Pike Street Seattle 22, Washington Laurel, Maryland Irving, Texas 5431 South District Boulevard, Los Angeles 22, California

Compounded Especially for the Metal Decorator

A new **Wet Print Varnish** has been developed especially for the Metal Decorator by the Watson-Standard laboratories.

This versatile coating can be used over dry printing as well as wet printing. It provides a glossy durable coating that really stands up.

Our experience in this field is available to you without obligation. Write us today.

Give us your finishing problem. We guarantee you an answer based on your conditions, and not just a standardized formula.

THE WATSON-STANDARD CO.
225 Galveston Ave. Pittsburgh 30, Pa.

Sure! Burdett Can Be Engineered to Your Present Equipment

WITH HEAT PROCESSING SAVINGS NORMALLY AS MUCH AS 30% TO 70%!

BURDETT (RADIANT HEAT) GAS SYSTEMS

HERE'S WHY YOU SAVE WITH BURDETT

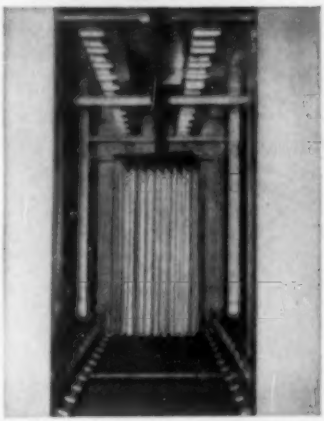
Radiant Heat Systems — designed and engineered by Burdett—give you results greatly superior to that possible with commonly used methods. You have complete, clean combustion through the use of Radiant Heat, and therefore a much higher standard of efficiency. Your production is consistently more uniform in quality, with rejects practically eliminated. Your fuel consumption is materially reduced, with man-hours and handling costs also lessened.

BURDETT SYSTEMS ARE PROVING THEMSELVES WITH MANY OF YOUR COMPETITORS —

PARTICULARLY IN SUCH FIELDS AS:

- PAINT — ENAMEL — LACQUER DRYING
- FLASH COAT DRYING
- BURN-OFF, DEGREASING
- WATER DRY-OFF
- CORE BAKING
- SOFT METAL MELTING
- FOOD PROCESSING

THE BURDETT BURNER
Heart of the Burdett System.



Another typical testimonial for Burdett Radiant-Heat Systems is this Wisconsin manufacturer who processes 2400 pieces per hour. With three complete baking operations required, he found Burdett Systems effected a 40% saving in time over an electric drying installation!

PROOF COSTS YOU NOTHING!

Send a blue print of your present equipment, together with a full description of your requirements. You will receive promptly and without obligation Burdett-engineered recommendations—positive progress in meeting today's challenging competition!

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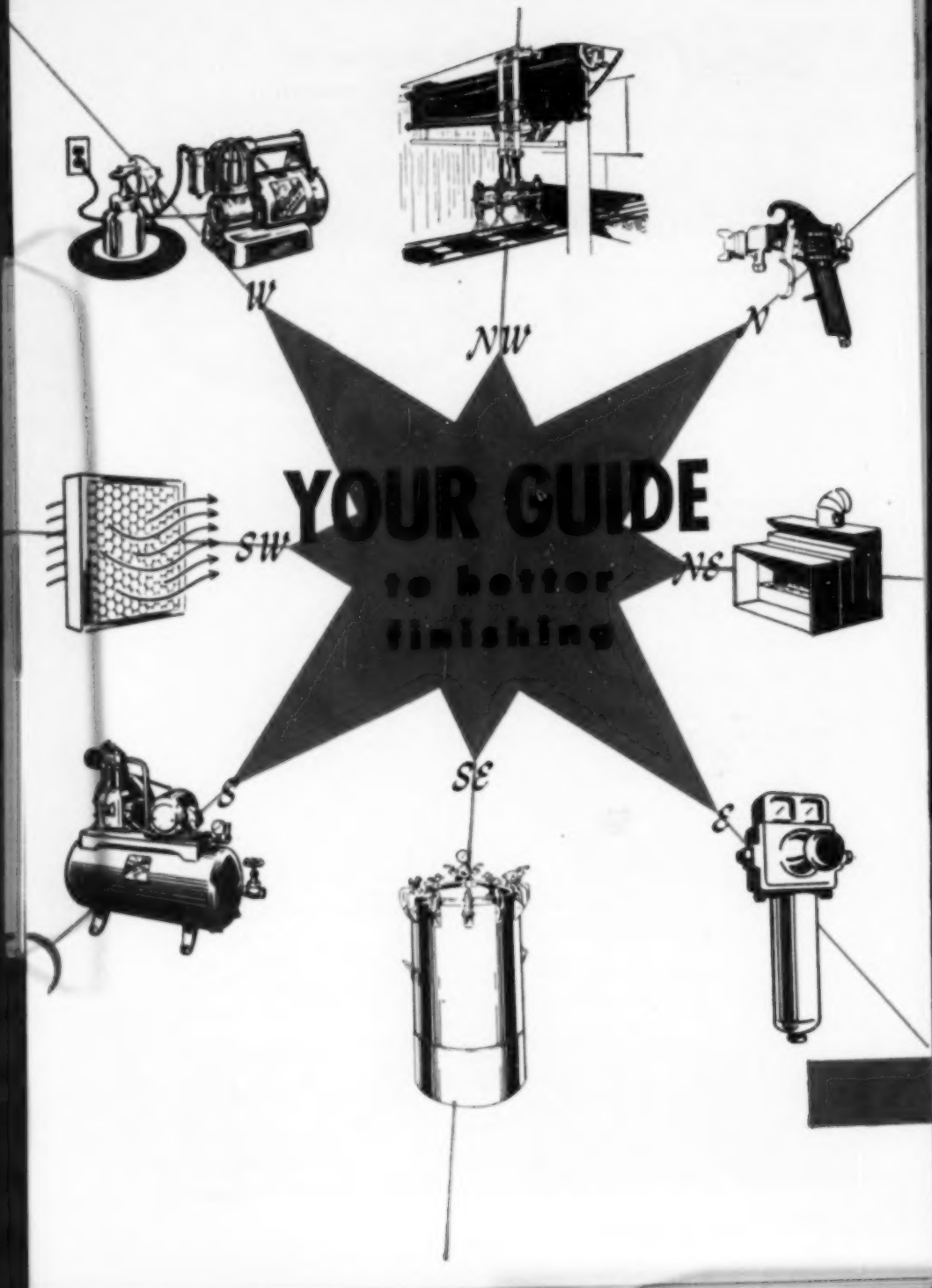
MANUFACTURING COMPANY

[illegible] West Madison St., Chicago 6, Illinois

RADIANT HEAT GAS SYSTEMS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Binks complete line of INTEGRATED spray finishing equipment

Binks spray finishing equipment encompasses the entire finishing field. Whatever you may need for your finishing department can be supplied by Binks... your single source for the best in spray finishing equipment. Binks engineers will gladly advise you on finishing problems or help you plan additions to your finishing department.

everything you need

- **SPRAY GUNS**—36 different models ranging from the newest precision Model 18 for applying the finest finishes to Model 7 E1 for spraying viscous undercoatings. Choice of 1,050 nozzles.
- **DYNAPRECIPITOR AND DRY-TYPE SPRAY BOOTHS**—over 510 different sizes and styles of spray booths, ranging from the Dynaprecipitor water-wash spray booths to bench and floor dry-type booths.
- **OIL AND WATER EXTRACTORS**—7 extractors, insuring clean, dry air for your guns.
- **MATERIAL TANKS**—a full range of 83, holding from 2 to 60 gallons.
- **AIR COMPRESSORS**—some 24 especially developed for spray painting.
- **AIR SUPPLY SYSTEMS**—to give you fresh, tempered air in your finishing department, free of dust and impurities. Cuts rejects.
- **PORTABLE SPRAY UNITS**—DP ½ and 5 other light portable units for applications in production and maintenance.
- **AUTOMATIC FINISHING**—ingenious equipment greatly increases production... slashes costs in many plants. See Binks for advanced methods in finishing your type of product.

"Binks engineers are constantly at work developing new equipment and methods to help you obtain finer, more economical finishing. Please call upon them."

J. E. Roche
Chairman of the Board

Write now for full information on the Binks line of finishing equipment.

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3116-40 Carroll Ave., Chicago 12, Ill.

NEW YORK DETROIT SAN FRANCISCO PHILADELPHIA PITTSBURGH CLEVELAND
ST. LOUIS MILWAUKEE BOSTON LOS ANGELES SEATTLE WINDSOR, ONTARIO, CANADA

PRODUCTION *Lithographing* OF METAL PRODUCTS

REGARDLESS of the end use of a piece of lithographed metal—that is, whether it will be used as a sign, name plate, waste basket or dust pan, the coating procedure is essentially the same. Lithography has developed into a mechanical mass-production operation, but the preliminary work definitely belongs to the arts, and it must be executed with extreme precision. A lot of real craftsmanship enters into the finished product. For descriptive purposes I have selected the Kool cigarette sign.

Preliminary Work: Preparation of Plates

There are two types of lithographing plates—deep etched and albumen. We use only deep etched zinc plates. These plates are made by photographing the original design or painting through screens of varying intensity and color separation filters, directly on the sensitized zinc plate. For this particular

By Ray W. Fultz, Supt. of
J. V. Reed & Company, Inc.

The sign at left is printed in seven colors on prepared sheet metal, two signs in width, on the lithographing press illustrated on opposite page. Permission to publish granted by Brown-Williamson Tobacco Co., Louisville.

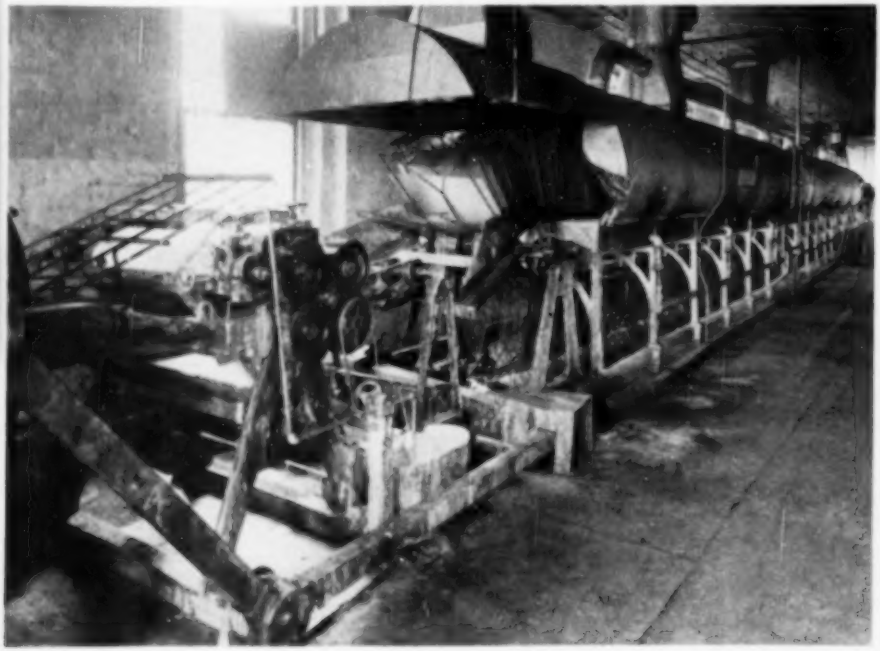
KOOL
KOOL
KOOL
KOOL
KOOL

sign there are seven plates, one for each color to be applied. Each plate is two signs in width. Immediately upon completion, and after each run on the press, the plates receive a thin coating of asphaltum to prevent any oxidation of the zinc surface due to exposure to the air.

A progressive proof book is made up on glazed paper to show a print of each plate in each individual color (for which the plate is intended); also, registry markings and progressive combinations of the various colors to the final completed sign. Each proof sheet contains a color swatch to which the ink must be matched for use on that particular plate. Combination color proof sheets show color swatches for all colors used up to that point. These progressive proofs are kept in the press room until the entire job is completed. Then they are filed for future reference.

Roller Coating Background Color; Baking; Cooling

Tin mill black metal of can-making quality, ranging in thickness from 34 to 30 gauge, and of suitable size (two signs in width) is used for this type of sign. The first operation is to apply the background color by roller coating. This is an alkyd-resin-base synthetic enamel, applied at a viscosity of 40 seconds at 78° F., as measured by



Roller coater and gas-fired oven for applying and baking background colors to metal sheets just before lithographing. Wicket-type conveyor carries the sheets through oven.

Photos Courtesy of DUO-THERM, Division Motor Wheel Corp.

BERRY BROTHERS ENAMELS *provide High Heat-Resistance . .*

. . and More!

In selecting Berry Brothers enamels for Duo-Therm space heaters, these enamels were *proved* by gruelling heat tests more severe than years of normal usage. But in addition, they're hard, durable enamels . . . retain their gloss and color indefinitely.

If your product is finished with paint, the Berry Brothers specialists who formulated these enamels can help you, too. Get the facts—write us today.

SEND FOR THIS "SPECIAL FINISHES" BOOK! *It's Free!*

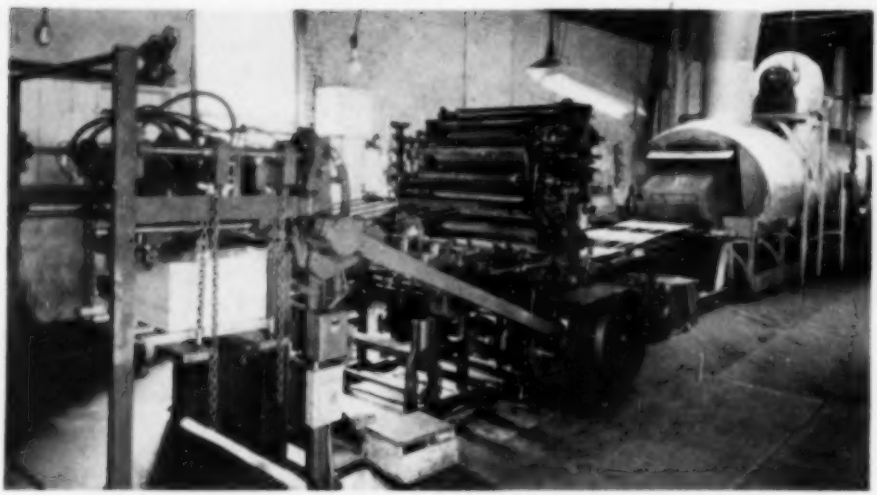
Let us "color style" your product. This free "special finishes" book describes dozens of new finishes for metal, wood and composition surfaces. In it you'll find a specification blank for free "color style" service. Send for it today.

BERRY BROTHERS

Industrial Finishes

Since Publication Began 1858

Detroit 7, Michigan • Walkerville, Ontario



At left is the automatic feeder with its elevator table supported by chains; next is the lithographing press, and at right the gas-fired oven. Belt conveyors carry metal sheets from feeder to press and from press to oven.

a No. 4 Ford cup. The enamel is applied at a film thickness of 15 points, as measured on a Pfund gauge. After setting up the roller coater, the operation is purely mechanical.

From 1000 to 1500 sheets of metal are placed on the elevator table of the automatic feeder. Four vacuum cups lift and feed one sheet at a time into the roller coater. As sheets are fed into the roller coater the feeder table is mechanically raised just enough so that the vacuum cups will contact the next sheet.

Leaving the roller coater (where enamel is applied to the top surface) the coated metal sheets are carried forward by rubber belts and finally picked up by wickets of the oven conveyor. Coated metal sheets immediately enter a gas-fired oven where the enamel coat is baked for 22 minutes at 300° F. After the coating has been baked the metal sheets pass through a cooling zone before leaving the oven, so they may be handled without gloves by the operator. The oven conveyor operates at a speed of 38 wickets per minute.

Metal sheets are then returned to the automatic feeder to be run through the roller coater to coat the backs. Some products, such as waste baskets, require a specific color on the reverse side, while in the case of signs and name plates, any color may be used, as this becomes merely a protective coat.

Lithographing the Colored Picture and Lettering

The lithograph press is a precision machine. Located at the top of the press is a reservoir in which a roller revolves to pick up the

It's a *ROUGH* life for *this* finish!

Model No. 975 Dump Truck
Mfgd. by Sherwood Toy Co.
200 5th Ave., New York 10

Between relocating the sandpile and helping Dad in the garden, Bobby Thompson is a hard man on a truck! But it'll "take it" easily, for the manufacturer uses Kirker's hardest baking enamel. Applied by electrostatic spray, it air-dries for 5 minutes then bakes for 6, and is cooled High resistance to carton-chafing allows immediate packing with no danger of damage to the brilliant gloss finish.

That's the way Bobby gets his truck — that's the way it stays, thanks to the bright, durable, protective enamel. And Kirker has helped ensure the sales appeal and customer satisfaction of another quality product.

Recommendations for your product
will be made on request.

KIRCO MODERN COATINGS

Kirker CHEMICAL COMPANY

ONE EAST ELEVENTH STREET • PATERSON 4, NEW JERSEY

rather heavy, viscous ink. Through a series of rollers the ink is carried down to the zinc plate which is bolted onto a drum roller. The quantity of ink transferred by this roller is controlled by a series of adjustment screws.

Precise registry is absolutely essential. Each zinc plate carries registry marks and these marks are carefully checked on the first piece that is run through the press. Adjustments are made to precisely align these marks so as to obtain perfect registration.

In lithographing metal products the background is usually white. If a colored background is used, then it is necessary to have a white plate to coat the entire area to be lithographed. The first color ink to be run is yellow, followed by red and blue. From this point on, the choice of colors and their sequence depends upon the subject or design used.

The particular sign shown at the beginning of this article has a white background roller coated on, therefore we start with yellow, followed by red, light blue, dark blue, ping, gray and green for the large "Kool" letters and the background for the word "Kool" on the label of the pack of cigarettes.

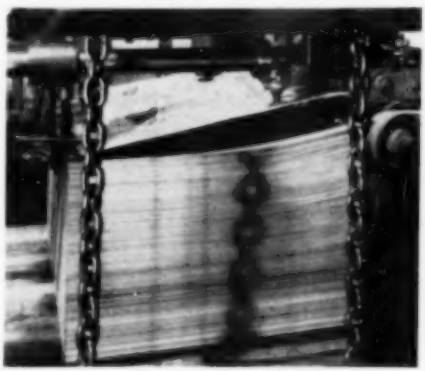
Cleaning the Press; Protecting Zinc Plates

After each color is run, the press must be thoroughly washed with a mixture of benzine and mineral spirits to remove every trace of ink. After the zinc plate is removed from the drum roller, the face side is given a thin coat of asphaltum to protect it from oxidation. When the next color plate is bolted on, the asphaltum coating is washed off with turpentine before the press is started.

Similar to the roller coater, the lithograph press is fed by an automatic feeder as described previously. After the ink is applied to the metal sheet in the press, rubber belts carry it forward to be picked up by wickets of the oven conveyor. This conveyor carries the sheets through a gas-fired oven where the ink is dried for six minutes at 300° F. The oven conveyor is operated through a variable-speed drive with a capacity of 46 wickets per minute.

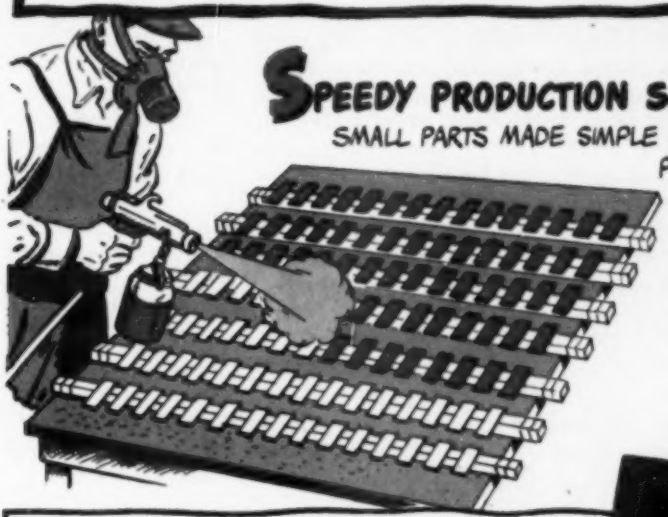
The speed of the automatic feeder, the press and the oven conveyor are synchronized and operate on a single control. This is absolutely necessary to obtain correct registration, and so that an empty wicket will always be in proper position to receive the metal sheet from the moving belts.

Every wicket is filled as it travels through the oven. After passing through the cooling zone at the exit



Close-up view of the automatic feeder. Two rubber vacuum cups at rear lift the metal sheet, an air jet injects a blast of air; two vacuum cups, at front, feed the metal sheet between rolls onto moving belts.

HOW TAPE HELPS INDUSTRY SAVE TIME, CUT COSTS...



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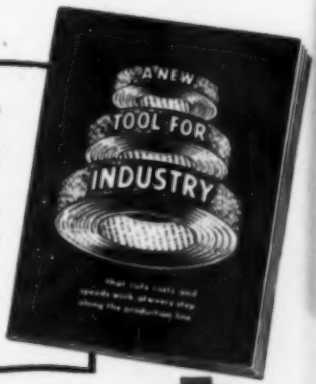
Twelve pages of facts, figures and pictures! Write today—on your business letterhead, please—to Dept. 13, at the address below for your copy.

PERMACEL *offers a complete line of laboratory-developed, job-tested industrial tapes.*



Permacel®

INDUSTRIAL TAPES

INDUSTRIAL TAPE CORPORATION • NEW BRUNSWICK, N. J.

end of this oven, metal sheets are returned for the next color. In this particular case, sheets go through the press seven times.

Protective Clear Coating; Embossing and Debossing

After the last color coat has been applied, signs are given a roller coating of a very clear, synthetic varnish. This protective coating has a film thickness of 12 points on Pfund gauge.

Next comes either embossing or debossing, whichever is required. For this particular sign, which has the word "Kool," the girl and the pack of cigarettes raised, composition board dies, both male and female, are mounted in the embossing machine. Guide strips indicate to the operator where to place the sheet of metal. A foot pedal causes the jaws of the machine to close; this exerts pressure on the metal between the dies and produces the embossing.

Metal waste baskets, name plates, dust pan hoods and other lithographed stampings all follow the same sequence of operations, except that the protective varnish coating is sometimes omitted where the product will not be used out of doors.

In packing products in cartons, all lithographed surfaces are protected from scratching and rubbing by interleaving with sheets of waxed tissue.

Yarnall Paint Company's Sales Convention

The Yarnall Paint Co., Philadelphia, Pa., held its annual Sales Convention at the Adelphia Hotel, January 5 and 6. Meetings were presided over by B. F. Swackhamer, vice-president. Speakers included Wm. MacKnight, president; F. M. McNerney, technical director; John Flood, plant superintendent; Horace Bentley, sales service technician; George Parker, Richmond, Va., and Vernon Avery, Wilmington, N. C., sales representatives.

New products and color lines were presented at the meetings, along with the new 1950 General Sales and Advertising Program.

Part of the convention was held at the general offices of the company, where the men were conducted through the plant in groups, and shown expanded plant facilities and new production equipment. Personal conferences were held by salesmen with the executives in charge of the different departments.

Yarnall Champions of the Month and Year were introduced at a banquet. Prize awards were made to George E. Parker, S. C. MacKnight, Robert L. Parker, David M. Marony, Vernon G. Avery, Charles H. Fulwider, Ellis H Thompson and Joseph M. Hyman.

Service pins were presented to Ellis H. Thompson for eight year's service and S. C. MacKnight for five year's service, both industrial sales representatives.

Lawrence-McFadden Company Celebrates Its 75th Anniversary

This year The Lawrence-McFadden Co. (fillers, stains, sealers, primers, lacquers, varnishes), Philadelphia 36, Penna., is celebrating its 75th anniversary. The company was founded in 1875 by Bruce C. McFadden, Sr. The second and third generations are now active in the company.

An recognized authority on wood finishes in his time, Mr. McFadden, Sr. developed stains and fillers for the furniture industry. In recent years the company has directed considerable effort to developing materials particularly suited for use in modern conveyorized finishing.

Men in the organization, at present, have been with the firm for many years. For example, there is one 50-year man, nine 30-year men, four 25-year men, four 20-year men and five 15-year men.

New Research Laboratory for Cowles Chemical Co.

Cowles Chemical Co., (Metal Cleaners) Cleveland, Ohio, has moved its research and development laboratory from the campus of Syracuse University to greatly enlarged quarters at 105 S. Townsend St., in downtown Syracuse, N.Y., according to announcement recently made by C. W. MacMullen, Technical Director of the company. The new laboratory is of fire-proof construction having a reinforced concrete floor, brick walls, and sheetrock ceiling.

mind if we talk about your operation ?

Yes, let's talk about your operation: let's talk about increased production with VELVA-TON, the synthetic finish that dries with the speed of lacquer, 40% faster. Here's the answer to your floor space problems because VELVA-TON FASTUFF air dries for handling in only 15 minutes, for packing in 2 hours. You'll move your product through faster . . . with a smooth, high-gloss finish that looks better too.

At Your Service: all the facilities of United's laboratories. Let us find the answer to your finishing problems with a custom-compounded formula and a generous working sample.

"Synthetic with the Speed of Lacquer"

VELVA-TŌN

FASTUFF

AIR DRY SYNTHETIC ENAMEL

PAINTS · SYNTHETICS
UNITED
LACQUERS · ENAMELS

United LACQUER MFG. CORP.

LINDEN 6, N. J. EVERETT 52, MASS.

Have high production cost

FOREMEN, SUPERVISORS, EXECUTIV
problem involving costs, performan
"bug". . . write E. I. du Pont de Ne
Division, Wilmington 98, Delaware.

DEPEND ON DU PONT FOR BET

got you hog-tied?

ABSURD COMPARISON? Yes and no! Many production men get this restricted feeling when faced with today's costs.

If you are constantly on the lookout for a way to keep manufacturing costs *down* and quality *up*, perhaps it is time to go over your finishing methods and materials again. Actually, finishing costs play a vital part in your *total* end-cost . . . *involve considerably more than the mere price per gallon of the finish itself!*

All down the line . . . in factors such as drying time, storage space, labor costs, percentage of rejects, and packaging . . . the *right* finish, correctly applied, can save you money. Subtracted from end-cost, these savings may make a substantial difference in the final figure.

Take advantage of the possibilities for more economical production in your plant. Call on Du Pont. Today, thousands of pretested formulas under the trade names "Duco" and "Dulux" are helping to keep manufacturers' end-costs at a minimum.

: If you have a finishing
. . . or a tough technical
urs & Co. (Inc.), Finishes

ER FINISHES

DU PONT

BETTER THINGS FOR BETTER LIVING
THROUGH CHEMISTRY

All eyes are on the FINISH

. . . ***including Mr. Turtle's.*** *He* was planning on that perfect finish every step of the way!

With STANLEY CHEMICAL helping you plan your course, you can count on much more than "a perfect finish." You can count on greater efficiency, savings, and an extra margin of profit. As the expert advice of skilled STANLEY chemists clears the way . . . a specially developed STANLEY finish will give you the undisputed edge in the race for increased sales.

To give your production an extra boost, your products an extra selling point, make use of STANLEY'S famous policy of *"Special Finishes for Special Applications."* Write today, STANLEY CHEMICAL COMPANY, EAST BERLIN, CONNECTICUT.

STANLEY CHEMICAL

INDUSTRIAL COATINGS

LACQUERS SYNTHETICS JAPANS ENAMELS

Leather Topped Tables

DURING THE LONG history of furniture making, leather-topped tables have been in vogue repeatedly. They are never completely out of style, but in certain periods leather comes into greatly increased popularity as a covering material for desks and tables.

That cycle has come again. Leather tops for knee-hole desks, coffee tables, drum tables, end tables and other pieces of occasional furniture are in widespread use today. Furthermore, since furniture cycles are relatively long—extending over a

Applying gold leaf to leather top. Photograph, courtesy of Maddox Table Co.

Preparation of leather before it is applied to a wood table, cementing it to the table top, finishing the leather and wood top and further decorating all leather panels with delicate attractive gold leaf borders.

number of years, as a rule—it seems likely that this popularity will continue for some time to come.

Leather Harmonizes with Wood; Variety of Finishes Possible

There is good reason for the recurrent interest in the use of leather as a part of furniture design. Artistically, leather and wood are compatible; they harmonize in appearance, texture and feel; they are comparable in durability—leather, as well as wood, may last for many generations.

From the design and manufacturing point of view, leather is desirable; it can be finished to produce an endless variety of effects; it may be given any desired color or combination of colors; it may be tooled or left plain; it may be decorated with an inlay of gold leaf, or left with only the grain of the leather to catch the eye. In fact, there is practically no limit to the ways in which leather may be blended into the functional and decorative design of furniture on which it is used.

Even though leather may be finished in a variety of ways, the finishing of leather-topped tables has been a troublesome operation for many furniture makers. Difficulties stem from the fact that the average furniture craftsman is not experienced in working with leather. He doesn't know the proper techniques and materials to use in finishing leather and he frequently treats the leather-topped table as if it were all wood, using wood lacquers over the entire surface. This is almost sure to lead to unhappy results, for the wood finish is quite hard; it is formulated to match the wood to which it is applied. When wood lacquer is applied to the much softer leather, cracks and checks may develop in the finish and extend into the leather.

Furniture manufacturers may encounter trouble in other ways when they start working with leather for the first time. Handling the hides, cutting the tops to sizes, cementing the leather to wood, eliminating wrinkles and flaws—all these and many other operations in the making of leather-topped tables can present problems to the manufacturer when he first begins to use leather in his furniture production.

Research and Experience Have Developed Modern Technique

The logical way to solve such problems is to seek advice from those who are experienced in the field in question. The excellent research facilities of the Rohm & Haas Co.'s leather laboratories are well known throughout the leather industry, and to furniture manufacturers.

Because of its long-standing interest in the furniture industry, Rohm & Haas found the problem of developing a satisfactory technique for finishing leather table tops especially challenging. It was studied for many months. Laboratory research was followed by field tests for evaluation of results. Much of the work was done in cooperation with leather suppliers and table manufacturers and, as a result, formulations and techniques for finishing have been developed which have stood the test of commercial application.

It might be pointed out that the finishing technique, as given in this

A finish by any other name

. . . does not rate the Zaponite* tag. For the Zaponite tag on a piece of furniture is an assurance of beauty that endures.

Zapon, the oldest name in modern lacquers, stands for perfection in finishes—finishes high in sales-appeal and durability . . . finishes whose long-lived beauty is assured.

More and more, leading furniture manufacturers turn to Zapon *service from every angle* for the answer to their finishing problems. Why not bring *your* problem to us? *Reg. U. S. Pat. Off.

Service from every angle . . .

that's ZAPON

ATLAS POWDER COMPANY

Industrial Finishes

Stamford, Conn. · North Chicago, Ill.

article, is only one possible procedure; the materials may be used in different ways by different manufacturers, for finishing has always been a strongly individualistic operation. But the technique described is a method which has proved to be practical in commercial application, and capable of producing results of fine quality.

Leather as Received by Furniture Manufacturers

Furniture manufacturers generally purchase their leather in the "color-coated" or the "antiqued" condition. This means they buy hides that are already partly finished by commercial leather finishers. If the hide is only color-coated, it has a finish which probably consists essentially of a Primal base coat and an Orthochrom lacquer coat. Antiqued leather has been further processed with additional lacquer coats of a different color to give the two-tone effect known in the leather finishing industry as "antique".

Primal is a product extensively used as a base coat in finishing all types of leather. It is an acrylic dispersion that fills and levels the natural defects of the leather. Excellent adhesion and flexibility are properties of the Primal base coat formulation. Flexibility is important in the fundamental finish for table top leather in order to minimize the development of cracks from handling before the leather is finally cemented in place.

Orthochrom is the trade name of a group of leather finishing materials which includes binders, clear finishes and lacquer colors. The lacquer is a nitrocellulose type, plasticized with a permanent, non-migrating plasticizer.

In addition to the application of the Primal and Orthochrom finishes, the leather will receive one or more plating operations in an embossing press. Snuffed (smoothed) grain leather is simply smooth-plated to level the surface and condition it for the subsequent processing. Deep buff or split leather is first embossed with the hair cell plate to improve its appearance and then it is smooth-plated.

The remainder of the finishing is done after the leather is cut to shape for the table. The exact procedure will vary considerably, since designs and manufacturing methods differ from plant to plant, but the finish formulation will be essentially the same in any case.

Cutting Leather for Top; Cementing It to Wood

The leather is generally cut, by template, to the exact size of the space it is to occupy. Some manufacturers prefer to cut it slightly oversize, since there is frequently some trimming anyway, and a slightly larger piece of waste makes the trimming easier.

A number of different methods have been developed to fasten the leather to wood. Sometimes a solvent cement is used; more frequently, perhaps, a water-based adhesive of the linoleum cement type is employed. In either case, the leather should be fastened down carefully, using some sort of short, thick squeegee or small hand roller to work out wrinkles or uneven areas as the cementing proceeds.

The squeegee or "slicker" may be almost any sort of rigid object

GOOD FINISHES START HERE

The quality of the filler is all important in building a good finish. Reliance Fillers have proved they are trouble free, high-quality in finishing rooms throughout the country.

Reliance Fillers reduce easily with ordinary naphtha; do not settle hard; pad-in and wipe-off without stickiness; fill the pores flush; dry quickly; add fullness and plumpness to the top coats; do not bubble, puff or shrink; produce clear, non-gray, permanent colors. In short, they do all that is expected of the best filler.

We make many types of fillers . . . each best suited to a specific need. A survey of your filler requirements will permit us to prescribe the right filler to insure your getting a good finish.

For additional information address 4732 Crittenden Dr., Louisville, Ky.

Rely on Reliance

RELIANCE VARNISH CO., INC.

AFFILIATED FACTORIES IN

LOUISVILLE, KY. CHICAGO, ILL. ROCKY HILL, CONN. ASHEVILLE, N. C.

which can be fitted with a rounded edge. Sometimes a piece of steel plate with one edge rounded is used; or, a short section of pipe, welded to a handle. A piece of thick Plexiglass, shaped as required, is excellent, since it is unaffected by water or by chemicals usually found in the adhesive. Even wood is practical. The slicker is used with considerable pressure, working from the center to the sides at all times, and taking care to see that the leather, as finally cemented, is perfectly flat and smooth. This is an important step in the production of high quality leather-topped tables.

Sometimes the leather is cemented to a separate plywood panel and inserted in the table frame after the wood has been finished; sometimes it is cemented to a base that is part of the table and has been routed to provide an undercut equal to the thickness of the leather; sometimes the undercut effect is provided by building up around the frame instead of routing in the center. There are many different designs in structure as well as style, but the finishing technique described here is practical with any of them. Most manufacturers do not consider it necessary to mask either the wood or the leather during the finishing, even though the two are finished separately, and with different materials.

Quality Finish Shows Build-up and Depth

The finishing method is noteworthy for the build-up and resulting depth which is obtained, and for the efficiency of the operation. Some manufacturers have found the reduction of time required to produce the finest possible finish on a leather-topped table almost unbelieveable. One plant superintendent, for example, was able to get better results with a simple padding lacquer in a few minutes than he had previously been able to obtain with a French polish technique that required several hours.

The quality of the finish is due, in large measure, to its build-up and depth. First a specially prepared flow coat is applied to the color-coated leather. It is sprayed on in a heavy layer that is almost flowing. Then a clear padding lacquer is padded on (applied with a cloth pad) to produce maximum smoothness. A colored padding lacquer follows. The edges of the leather are given special attention here for the graduation of tone should go from dark, on the extreme edge, to quite light—little darker than the original color coat —in the center.

Padding in Lacquer by Skilled Craftsmen

Considerable skill is required in padding to get the most effective results, although the skill is more a matter of artistic judgment than actual manipulation. When a particular effect has been obtained that is acceptable as a standard, a skilled workman has little difficulty in duplicating the result, so long as the same materials and the same techniques as employed.

After the color padding to produce the tone gradation has been completed, another padding step, using clear padding lacquer, is recommended to increase the depth or third-dimensional effect of the finish. Finally a clear coat, consisting

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1875 - - 1950
A Tribute to Our Employees with *Over 600 Years of Service*

WE ARE glad to have this opportunity to express our sincere appreciation to our employees, named below, who are the backbone of our organization, for their many years of efficient and faithful service. May the same progressive and pioneering spirit, which has prevailed since Mr. Bruce C. McFadden, Sr., founded our company 75 years ago, continue through the decades to come. They are presented to you in the order of seniority. Their combined individual record of service totals 634 years. We are justifiably proud of this record, because the true measure of any organization is the ability of its manpower, supplemented by the knowledge they have gained through many years of experience and service to its customers.

50 YEARS

H. O. Schuessele

30 YEARS

E. J. Schuessele
W. Scott McFadden
Frank J. Meadows
H. M. Hill
Bruce C. McFadden, Jr.
Albert Stohrer
J. C. Cuthbertson
W. R. Patton
W. L. McFadden

25 YEARS

E. V. Adams
A. E. Gutteridge
L. P. Joos
H. L. Vogel

20 YEARS

W. J. Lex
H. G. Koebley
Edna R. Troxell
William Leupold

15 YEARS

J. G. Brenner
W. F. Oser
G. A. Egloff
E. M. Adams
T. B. Beck

FILLERS—STAINS—VARNISHES—LACQUERS—SEALERS—PRIMERS & FINISHES FOR CONVEYORIZED PRODUCTION

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

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of the same materials used in the flow coat, is applied—sprayed on over the whole surface—for protection of the finish. This final top coat is commonly allowed to cover the wood on the top, too.

With the spraying of the top coat, the table is finished, except that gold leaf and some tooling decoration are often added. This step may come before or after the finish spray coat. When gold leaf is appied on top of the finish a second top spray is usually added for protection. After the gold is in place, many finishers give the wood a light rub and then wax the entire top.

Then the table is ready for the showroom. It may be a dainty little drum table; a long, low coffee table; a massive breakfront with leather on the face of the doors and drawers; or a large knee-hole desk with a three-panel leather top. Whatever the piece, the leather—when properly finished—gives it an air of elegance combined with warm friendliness; beauty coupled with practical usefulness. With reasonable care, the leather will last as long as the table itself, growing more attractive as it mellows with the years.

From The Rohm & Haas Reporter, published by The Rohm & Haas Co., Phildelphia 5, Pennsylvania.

Berkley-Schreiber Co. Expands

The Berkley-Schreiber Co. (Lacquers and Synthetic Enamels) whose operations started June 1, 1949, announces the expansion of production facilities. A complete line of industrial finishes is manufactured at the Ephrata plant. These include clear and pigmented lacquers and synthetic enamels, both air-drying and baking types; also thinners and novelty finishes.

Harold A. Edlund is Appointed Director of Sales for Arco Co.

Harold A. Edlund has been appointed Director of Sales of The Arco Company, Cleveland and Los Angeles manufacturer of paints, varnishes, lacquers, enamels and many products. Mr. Edlund's headquarters will be in the company's executive offices in Cleveland, Ohio.

Harold A. Edlund becomes Arco's new Director of Sales

In announcing Mr. Edlund's appointment, Mr. H. E. Wise, president, said, "We are fortunate in securing Mr. Edlund to direct Arco's stepped-up programs of sales and distribution. His broad experience in directing the merchandising efforts of many large companies, plus his ability to understand and solve marketing problems faced by jobbers and distributors, will be helpful in securing wider acceptance of Arco's line of paints and industrial coatings."

L. B. Paris Now Sales Manager of Aluminum Industries

Aluminum Industries, Inc., Cincinnati, Ohio, has appointed Lyle B. Paris as Sales Manager of its Paint & Varnish Division.

Paris, who has served as West Coast District Manager for the company during the past three years, succeeds M. M. Carmody, resigned, as executive head of sales for Permite Aluminum Paints and Varnishes.

Many Own Stock in Du Pont

E. I. du Pont de Nemours & Co., Inc., was owned by 109,945 stockholders as of December 31, 1949, an increase of 5497 over the number recorded at the close of the third quarter of 1949, and an increase of 15,044 over the number of holders as of December 31, 1948.

There were 92,753 holders of common stock, and 23,570 holders of preferred stock as 1949 ended. These figures included 6,378 holders of more than one kind of stock. Every state of the union is represented among the owners of the company.

By actual test

For Color Retention

On Light Finishes . . . . It Is

CRYSTAL CLEAR
WATER WHITE
LACQUER

• It's a new, time-tested material for preserving the original color of those beautiful grays, off whites, lime, pearl, ermine and all pale, bleached and decorative effects so popular on furniture of today.

THE SCHAEFER VARNISH COMPANY
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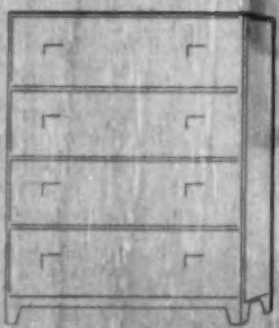
15th and Magnolia
LOUISVILLE 10, KENTUCKY



How to Prevent Fires

On page 106 of December issue is a paragraph on fire protection which pretty well hits the mark. We solicit your approval to reproduce this in a letter to industrial firms, and possibly on some other advertising material.

You will also be interested to know that our reading of this, and many previous issues, is on a "plus-circulation" basis. The magazine was handed to us from a subscriber, and we have found it very interesting. We are today forwarding inquiries to two of your advertisers. Your advertising department may be interested in knowing of these inquiries on the basis of circulation not reflected in the regular CCA figures. — CHEMICAL FIREPROOFING CORP.

Thank you. Use the paragraph in any way you wish.—ED.

Hot Spray Process to Paris

We have read with great interest the article beginning on page 12 of December, 1949 issue, in regard to the "Hot Spray Process." By chance we received, a few days ago, an inquiry from friends overseas (Paris, France) in regard to this process and as we do not want to destroy our copy, we would appreciate it if you would send our friends tear sheets concerning this article or, if possible, the complete December issue. The address is . . . . —H. COMPANY.

Copy of magazine sent.—ED.

Dusting Powder to Produce Metallic Sheen

In going through an old file, we came across your letter of April 15, 1949 referring to a dusting powder. What the Morris Register Co. probably saw was a powder called "Tecksak," a patented material. This powder is applied just before the finish sets and, when dry, a very light buffing brings out the metallic sheen. It shows up best on the darker finishes. If the Morris Register Co. is still interested, we can furnish the powder at $3.00 per pound.—SUNBRITE MFG. CO.

Flock Adhesive

We are told that one or two paint manufacturers have specialized in the production of a flock adhesive, and it occurs to us that you may be able to give us the name of any manufacturer who may have brought himself to your attention in that connection. If you cannot make any specific reference, will you tell us who might be the most likely prospect to whom we can address an inquiry?

We are extremely interested in making connections with such a manufacturer, so if you will let your reply come forward at the earliest possible convenience we will appreciate it very much indeed.—A. COLOR WORKS.

Information furnished.—ED.

Clear Coating for Name Plates

We are interested in securing a lacquer or any clear coating that can be used on name plates (brass etched on black oxidized background) that will withstand Government Humidity Test of 15 cycles, 6 hours at 95% R.H. and 149° F.; 18 hours cooling to room temperature and 100% R.H. The salt spray requirements are 50 hours at a concentration of 1.142 at a temperature of 90° F. Can you tell us where material of this kind can be purchased?

We have tried a synthetic lacquer baked at 300° F. for 30 minutes, but this will not withstand the above test. This matter is extremely urgent and any suggestion from you will be greatly appreciated.—U. S. GAUGE . . .

In a letter we are naming a few concerns who, we believe can supply a coating suitable for your requirements.—ED.

Recover "Wash-Thinners" and Save Money

In the Questions and Answers of January issue, on page 90, F.C. in Texas presents a question regarding cleaning spray guns, and receives several answers from concerns having similar problems.

What astounds us is that apparently none of these concerns think of having their wash-thinner recovered. By doing so their cost for the thinner used for cleaning can be cut from 10% to 70%, depending on the distance to the nearest recovery plant and the original cost of the wash thinner.

If you ever have a similar question presented we would appreciate an opportunity to answer it, as we are saving hundreds of thousands of dollars for con-

boost profits 2 ways

CUT FINISHING TIME

The New
Mity-Midget
$79.50

PRODUCE A BETTER FINISH

Use NATIONAL SANDER Model 400

The new Mity-Midget Model 400 National Sander cuts sanding time as much as 75%. Twenty-five square inches of abrasive area moving in a 3/16" orbital stroke makes from 5000 to 6000 revolutions per minute. In addition to speed, the Model 400 gives a better, more even finish. Paper is backed by a sanding pad and a metal backing plate to assure even pressure over the entire cutting area. Because it is made of strong, light-weight alloys, this efficient machine weighs only 4 lbs. See it at your distributor, or write for details.

Write for NATIONAL'S New Sanding Catalog

NATIONAL SANDERS

NATIONAL AIR SANDER, INC.
2818 AUBURN ST., ROCKFORD, ILLINOIS

cerns in New England, the Middle Atlantic States and the Northern Midwestern States, by furnishing service to them.—SOLVENTS RECOVERY SERVICE, INC.

Blushing and Blooming

I have just finished reading the article by W. BEACHAM on Blushing and Blooming (November 1949, page 74). As to spraying thinner over the lacquer coat, that is one way to hide the bloom if a bloom or blush cannot be prevented. If the finishing foreman will mix one pint of butyl acetate to five gallons of the sealer or lacquer, or one pint of butyl Cello Solve and one gallon of lacquer retarder to a 50-gallon drum of the sealer or lacquer, he will prevent the bloom or blush.—C. M. HOKE, Portland, Oregon.

Oil Bloom Remover, X10 Has Limitations

Referring to my article, "To Overcome Oil Bloom on Lacquer Finishes", published in December 1949 issue, on page 63, finishing foremen who have used it report that Formula X10 accomplishes equal results on mahogany, walnut, maple and black lacquered finishes. However, while this product will improve a good finish, well rubbed, it is not recommended as a cure-all for a cheap, poorly rubbed finish.

The reason for this is obvious. Anything that will bring out the beauty of the grain and finish in a quality finish will likewise bring out the flaws resulting from cheap material and indifferent workmanship in a poorly finished surface.—J. C. HERTSTEIN.

Silk Screen Printing Machine

Will you kindly give us the address of the Dependable Compressor & Machine Co. which you recently mentioned in this magazine, as having developed a machine for printing on cylindrical or spherical objects? We want to contact them, but are unable to find out where they are located. —S. FIBRE CO.

The address is 1018 Sixth Ave., New York 18, N.Y.—ED.

Testing Viscosity of Lacquers

We are completely unfamiliar with the method of controlling the viscosity of lacquers, but are aware that a Zahn G-2 cup is used for this purpose. Will you therefore kindly advise us where the unit can be purchased. You may also send us detailed information for the control of lacquer viscosity.—B.W.Co.

Try the General Electric Co., 1 River Road, Schenectady, N. Y., or Vol-U-Meter Co., 75 Wilbury Place, Buffalo 16, N. Y. —ED.

Painting Used Steel Drums

We have sent our August, 1949 issue of INDUSTRIAL FINISHING to Mr. Landen of the Navy Department so that he could read your interesting article on "Cleaning and Painting Used Steel Drums."

Inasmuch as we retain these magazines from month to month, as a reference source, we would appreciate if you would send us a copy to replace the one we gave Mr. Landen.—C. S. BOWEN CO.

Copy of August issue sent.—ED.

Can Supply Frosting Lacquer

We notice an inquiry in December issue, on pages 80 and 82, over the signature of "F.P.L.", for frosting lacquer. We specialize in this item (Frosty, The Snowflake Finish) and would be pleased to follow this inquiry, if you will give us the name of the firm that is interested.—SEABOARD PRODUCTS CO., New York 10, N. Y.

Information supplied.—ED.

Coatings for Cast Plaster Items

We are manufacturers of cast plaster items for giftwares and advertising displays. Though finishing is the most important phase of our operation, information on this subject seems rather scarce.

Could you recommend some finishing manufacturers who are familiar with the various types of plaster and who could, in turn, recommend the best finishes suited to each? We are especially interested in quick-drying lacquers and deep flat colors. —R. Artcraft Co.

In a letter we are naming a few concerns, but we are not sure that they can supply what you want. We would like to hear from companies that can supply such materials.—ED.

Paint Remover Samples Wanted

We beg to ask if there is any opportunity for us to obtain a sample of the new advertised non-greasing paint removers for motor vehicles. Import possibilities are not at all the best for goods from U.S.A., but we would like to be acquainted with what is available.—Glasso, SDR. Boulevard 35, Copenhagen, Denmark.

McCormick Silk Screen Printer

We note, with a great deal of interest, Mr. Biegeleisen's very interesting article on the "Highlights of Silk Screen Process Convention in Cleveland" in December 1949 issue.

He makes considerable mention of the McCormick Automatic Silk Screen Printer and you may be interested, in connection with reader inquiries, to know that we are

NEW PERIOD
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LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
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Here are quality finishes you can rely on for lasting beauty. They're easier to apply . . . give superior coverage. No wonder New Period Finishes are star performers in plants coast to coast.
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NEW YORK WOODFINISHERS' Supply Co.
109 IMLAY STREET BROOKLYN, N. Y.

distributors for Canada and Eastern United States.

Western United States and British Columbia are served by John Dunkley, Acorn Advertising Co., P.O. Box 880, Merced, California.

Any inquiries may be directed to one of the above.—Scott's of Hamilton, 68 King St. East, Hamilton, Ontario, Canada.

Strainers for Finishing Materials

For the past few years we have been in the process of finishing our own leather, and occasionally we find a few kinks that can be straightened out very rapidly with a little of your able assistance. At present, we find a great deal of time lost and material wasted by virtue of the necessity that we must strain the pigment used in the first coating of leather.

We are now using cheesecloth, which, when washed, stretches and becomes too loose for a suitable filter. We are wondering if there is a commercial type filter of paper or wire or some other substance that you can suggest as a remedy for our difficulty?—H. LEATHER GOODS CO.

In a letter we are naming two suppliers of strainers which will probably take care of your requirements.—ED.

Tack Rag Articles

Somehow I missed the article in November issue on tack rags, or the use of tack rags. Is there any way in which I can get a reprint or a copy of this article? —J.W.M.

Tear sheets on this article are being sent you, but please be sure to read the two follow-up articles in December issue (pages 74, 76 and 114). The articles in December issue are from Tack Rag manufacturers who criticize some statements in the November article and add certain technical information on the subject.—ED.

Salad Bowl Finish

Please advise the proper finishing material to use on the inside of salad bowls used in serving salads with different combinations of salad dressing — something that will not wash off or contaminate food.—A. PLYWOOD CO.

A clear, thin, penetrating-type of non-toxic waterproof finish is the answer to your requirements. In a letter we are naming a few concerns that can probably supply what you need.—ED.

Marking Those Radio Dials

We notice in November issue the picture on page 25 showing a girl using a special fountain pen and ink to fill in lines and characters on finished radio dials. Would it be possible for you to advise us as to the supplier of this pen and ink? We have several problems involving filling in lines, which could be eliminated with equipment such as is shown. — C. PLASTICS CO.

See the Author's reply to a similar inquiry, as published in January issue, page 84.—ED.

Want Enameled Wire

Can you supply us with the names and addresses of firms that manufacture enameled iron wire? We are interested in red wire approximately ⅛-in. in diameter. —IDEAL FASTENER CORP.

Will some reader please give us the name and address of a firm that can supply this item?—ED.

Roller Grain Process

We would appreciate it if you would be kind enough to recommend to us some technical advisor for roller grained process on metal furniture; also suppliers of rollers, graining plates, and technical information pertinent to graining by roller process—K. INC.

We suggest American Richwood Products Co. and Interchemical Corp. (See advertising pages.)—ED.

We Will Do Custom Graining

Referring to "Letters from Readers", in January issue, page 86, we notice that S.P. Products Co. (N.Y.), asks for some custom shop or manufacturer to do wood graining. We are in position to do custom graining on a large production basis; have 5000-sq. ft. of floor space, several spray booths and complete equipment; also, have access to another 5000-sq. ft. of space. Atlas Wood & Metal Finishing Co., Inc., 230 Third St., Brooklyn 15, N.Y.

Strip-off Coatings Wanted

We would appreciate receiving a list of firms manufacturing strip coatings or compounds. We intend to apply the coating to rubber rolls of a glue spreading machine and stripping the coating after the glue operation has been performed. If possible, this use of the compound would be of considerable advantage since the cleaning of the machine is extremely difficult by use of solvents.

There are several questions to be resolved before using the compound, such as stripping it off clean and easily from rubber, and whether the compound would be attacked by the solvents of the adhesive.—S. Inc.

List supplied.—ED.

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JAMES B. DAY & CO.

CHICAGO 14

Painting Steel in Coil Form

We are interested in getting any and all information possible on the painting of steel in coil form. Also, we would like assistance in locating companies now doing this type of work, and in paint sources experienced in formulating coating materials for steel where all fabricating, shearing, deep drawing and other operations are done subsequent to the painting operation. Example: Bottle cap blanks and steel oil container blanks. In our case single color coatings will be used primarily.—R.P.Co.

To coat strip steel in coil form, you have a choice of several methods and materials which you can use. Any one of them will do a satisfactory job, provided the layout is designed with sufficient flexibility to compensate for the various "bugs" that will certainly appear. Since the finish must withstand severe forming abuse, adhesion becomes the most important requisite of the film. It is, therefore, doubly important that the steel be chemically clean and dry before painting. The cleaning process can be done either separately or arranged as an integral part of the finishing system.

For methods, you have a choice of dipping, spraying or roller-coating. Dipping will coat both sides at once and would probably be the least costly to install. However, dipping is not as simple as some people think; it requires careful control of speed and material viscosity to assure proper flow and film thickness.

Spraying and roller-coating will give you better control over the work, and they also have the advantage of being able to coat only one side of the work, which is sometimes desirable. If the steel strip is fairly narrow, a small roller-coater would be the least expensive. However, if widths of more than 15-in. are contemplated, it would pay you to consider the most flexible of all methods, an automatic spraying machine. All of the leading manufacturers of spray equipment make excellent machines of this type.

Also, for reasons that will be explained, some provision must be made for a short baking cycle. Stationary or batch-type ovens are seldom satisfactory for drying the paint on continuous sheets or strips. A conveyorized setup is better, using either a vertical or hump type of oven to conserve floor space. Either convection or infra-red is well adapted to this process, provided there is adequate venting of the solvents. In application I would say that uniform film thickness on various gauges of stock, and thorough even curing of the film are the most important factors.

The most suitable materials for this work are those formulated from the vinyl resins—usually the copolymers of vinyl chloride and vinyl acetate. For deep drawing, a lubricant plasticizer is used to facilitate fabricating. While these films dry like lacquer for handling, on smooth surfaces like metal, a 15 to 30 minute bake at 300° to 350° F. is necessary to obtain good adhesion. Once cured, they have remarkable flexibility, plus moisture and corrosion resistance. [*To page 84*]

Specializing in

HIGH QUALITY

Furniture and Metal

FINISHES...

Since its inception, Wolverine has specialized only in high quality finishes for wood and metal. Leading manufacturers now testify to the uniform, high quality of its materials, and to the dependable and prompt service which Wolverine renders at all times. Inquiries are invited.

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Industrial
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In addition to their resistance to oil, alkalis and acids, the vinyl lacquers are odorles, tasteless and nontoxic. The latter are qualities to consider for food and beverage containers or caps for same. Vinyl lacquers can be had in clear, translucent or dyed, and in most colors. Subsequent designs are then screened or lithographed on the coated stock, using vinyl inks.—GEORGE CONRAD, Finishing Consultant.

"Plastic Lacquer" for Finishing Furniture

On a trip to the United States last summer, this magazine was recommended to us by furniture manufacturers. As new subscribers we have already received a couple of specimens, which we find very interesting.

As plastic lacquer has found a wide use in woodworking in your country, we feel pretty sure that it must have been dealt with in INDUSTRIAL FINISHING. We would be very gratified to know if the respective numbers of your magazine could be supplied. Should there be any book on plastic lacquer, it would also be of great interest to us.—The Association of Norwegian Furniture Makers, Oslo, Norway.

Your reference to "plastic lacquer" has both the Editor and me somewhat puzzled because the term "plastic" is used so loosely in this country. I presume you do not mean nitrocellulose furniture lacquers because they are well known throughout the world. However, they are closely related to plastics as they are known here. Several books on nitrocellulose lacquers are in print in this country.

I believe the material in which you are interested is based on urea resins. It is called by many names here. My own term is urea-alkyd furniture finish; it is also called low-bake furniture finish, urea furniture finish, baking synthetic, and perhaps even synetheic or plastic lacquer.

This finish consists primarily of butylated urea resin, from 40% to 50% of the solids or non-volatile content. About 5% to 10% of an acid catalyst is used to enable the urea resin to convert to the infusible and insoluble phase at low temperatures. Such catalysts as butyl acid phosphate are used. The remainder of the solids portion consists of plasticizing and resinous materials such as alkyd resins and hard, brittle types of maleic alkyds.

These finishes are sprayed at 40% to 50% solids, and baked about two hours at 140° to 150° F. When cool they are then quite hard and can be rubbed and crated.

There is very little published about these materials in our literature here; the references are short and scattered. One of the most complete articles on their performance was one of mine published in INDUSTRIAL FINISHING Magazine, starting in December 1947. —ROLLIN H. WAMPLER.

Coating Sheet Metal Products

We contemplate making a product consisting of a round tray approximately 10½-in. in diameter, with a ¼-in. lip around the perimeter. In the center will be a section resembling a chimney approximately 4-in. high. We have been endeavoring to obtain information as to how to set up a small automatic spraying layout for each individual piece.—B. TOY CO.

I suggest that you investigate the possibilities of an automatic spray machine having a horizontal chain conveyor on which are mounted vertical spindles to support the circular

SAND BY AIR

IN STRAIGHT LINES WITH THE SUNDSTRAND OPPOSED PAD SANDER

and Get a Better Job Faster

This is the sander you'll want for production or maintenance work on wood, metal, plastic or composition. It's a sturdy air operated machine—easy to handle because of vibration-free action.

You'll effect savings between 50% to 70% on production sanding—wet or dry.

Pads of this outstanding sander reciprocate in a straight line and in opposite directions—grain structure can be followed easily, producing finer final finish. Ask for a demonstration of a Sundstrand in your plant before buying any portable sanding equipment. There's no obligation.

FREE DATA

If your work includes sanding of wood, metal or composition on production or maintenance work, write for free complete bulletins. Ask for bulletin IF-50.

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PNEUMATIC MACHINE DIVISION
ROCKFORD, ILLINOIS, U.S.A.

trays. The spindles should be mechanically rotated in the spray booth.

The number of fixed spray guns needed to satisfactorily coat the trays may have to be determined by trial; however, I believe that two spray guns will be sufficient.

The setup can be arranged to include an oven for baking the finish if the trays are metal, or an oven to force dry the finish if the trays are wood or plastic. The oven may be infra-red, convection or electric strip heater type.

All of the equipment suggested here can be supplied by concerns that advertise in this magazine.—H.T.M.

An engineer could give you much more specific information if you had submitted a drawing or sketch of the article you plan to coat, and if you had given added facts about finish requirements. As it is, any suggestion or recommendations you receive will be more or less guess work.

As I picture the job it seems to be a natural for precoating on roller coating equipment; then fabricating—that is, if edges can be rolled under in the tray, and folded in on the centerpiece. Dip coating is also a possibility here, and it should be given consideration if the unit or pieces lend themselves to dip operations.

Probably the most efficient and economical method for enamel application would be Ransburg electrostatic spraying. In some cases this equipment can be made quite flexible by the installation of adjustable grids. Samples of parts to be coated can be sent to the Ransburg Electro-Coating Corp. (Indianapolis) to have accurate determination made as to whether or not the equipment would be suitable.

It is difficult to determine what would be best to do, and what proposals should be made, unless one has a clear idea as to the end use of the product, the proposed quality, and the number of units to be manufactured. Fortified with this basic and fundamental knowledge of requirements, a definite proposal can be made with a greater degree of assurance that it will prove to be practical.—A. P. LEHMANN.

Painting License Plates

I read the question of C. N. of Vancouver, B.C., Canada (December, page 86) relative to painting license plates. I have had several years experience in this line and believe I can offer C.N. some valuable suggestions if you will give me his name and full address.

I notice in the answer, you stated that most of the sheet stock is coated by rollers before fabrication. I think this might be doubtful. I have visited several reformatories and at least one commercial producer where the plates were fabricated and the ground coat or background coating is applied by dipping. The numeral coating is applied by a roller process. Some use a magnetic chuck to hold the plates firmly while the numerals are coated; others use a direct flow process.—D.S. THRELKELD.

If you will send us the complete name and address of C.N., we will have our Canadian representative acquaint him with the information contained in the manual on that subject which we have prepared.—PAUL H. KRUPP, Fostoria Pressed Steel Corp.

Clear Durable Finish for Oil-Painted Work

We manufacture a line of art goods, some of which are figurines. We spray some of these with artists' guns, using fine lacquers, which are then coated with gloss lacquers, also dull lacquers.

Some of these figurines cannot be sprayed and must be hand painted,

Picture frame handsomely finished in dark brown Claremont Flock —white sculptured horse is processed with contrasting tan and white Flock.

—Use CLAREMONT *Flock!* industrially . . . decoratively

The above unique and life-like presentation indicates the industrial and decorative use-potential of Flock. For the finest in Flock, we invite you to contact Claremont.

Courtesy of Jonn & Co., New York wholesale distributors.

INQUIRIES INVITED

Claremont Flock is available in bulk, in neutral shades and 18 rich colors, in quantity for special spraying-on finishing purposes. Write for samples, color charts, complete details and prices.

CLAREMONT WASTE MFG. CO.
CLAREMONT, NEW HAMPSHIRE

and as lacquer is so difficult to brush on, we use oil colors which can be brushed. Our problem is: To obtain some quick air-drying material that we can spray over this oil painted work, something that will give a hard durable finish. Ordinary varnishes will not do.

We have tried water colors but they spoil all the fine detail. Perhaps there are other materials besides oil paints that can be used, hence our reason for writing you.—H.D.A.

Your problem of getting a quick-drying material of a transparent nature to apply over oil colors should not be too difficult to solve. Lacquer, of course, will lift the oil colors; and varnish, I presume, is too slow-drying. It occurs to me that shellac might do the trick. Get some dewaxed and refined shellac in about 4-lb. cut (4-lbs. of shellac gum to one gallon of alcohol). Mix it with an equal volume of alcohol.

If the oil colors are thoroughly dry (this is an absolute requisite to success) you can then spray on a very thin film at first. The solvent will flash off quickly, and in a few minutes you can recoat. In this manner you can build up a satisfactory film in four or five applications. By applying very thin films the solvents will flash out before they have an opportunity to swell and rupture the film of oil color. As a matter of fact, after about two thin coats of shellac, you can then apply one or two thin coats of lacquer with success.

In fact, if the oil colors are thoroughly dry, you can build up a film of clear lacquer directly over the oil colors by following this thin-coat technique. You might investigate the possibility of baking the oil colors hard in an oven. I do not know whether your substrate will give trouble or not, but two to four hours at 225° F. may harden the oil colors so much that you can apply lacquer directly over them. If this process gives promise, then try adding a little varnish to the oil colors. The varnish will not interfere with hand painting, but will make the colors much harder after baking than they would otherwise be.

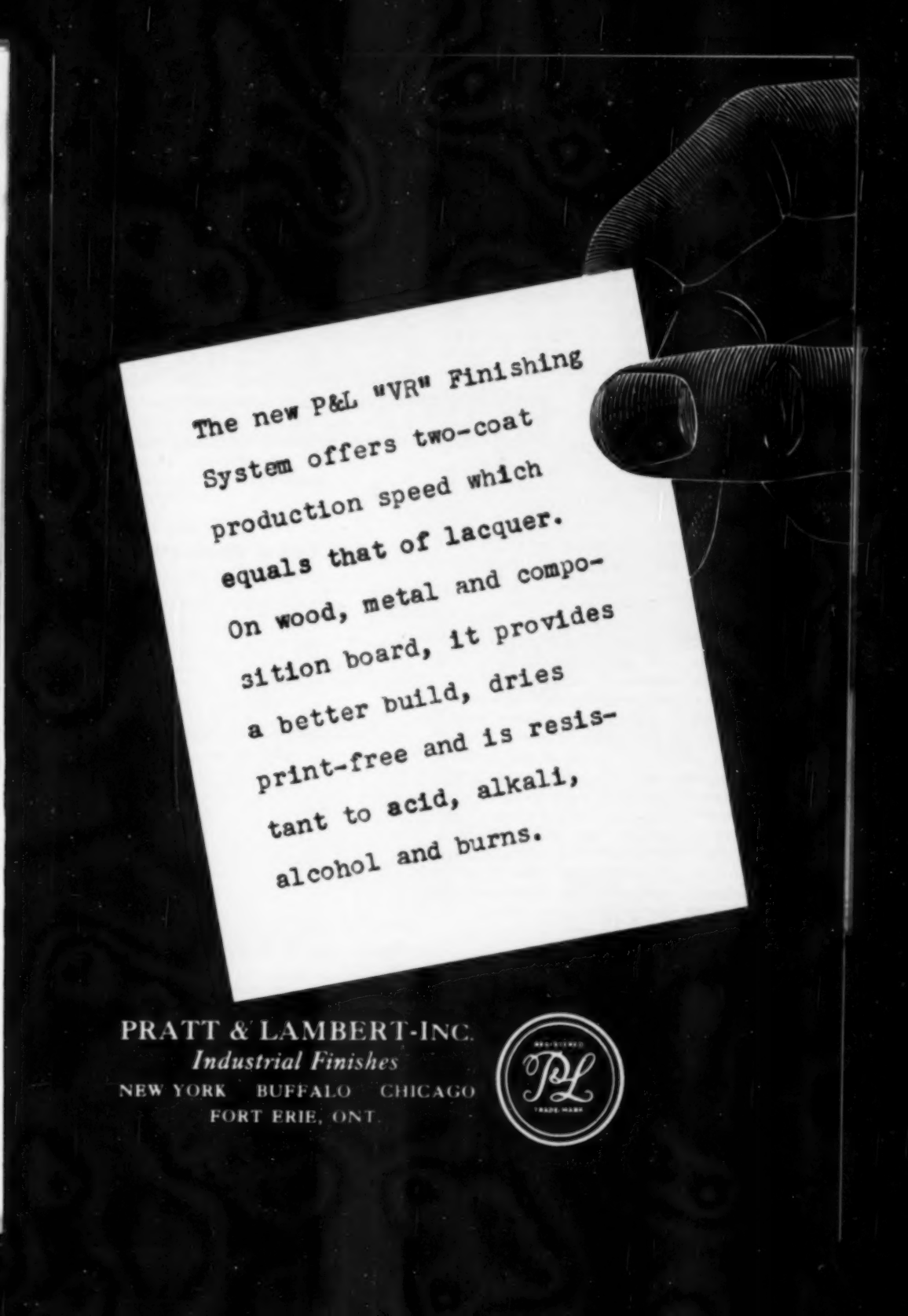
The thought occurs to me that you can use lacquer-base oil colors. These can be made up for you in sufficient concentration for hand painting. To prevent them from drying too fast you can add some lacquer retarder just before application. If you cannot find them through regular outlets, you can get them from R-B-H Dispersions, Bound Brook, N.J. Lacquer base colors can be spray-coated with clear and flat lacquers.—ROLLIN H. WAMPLER.

Pink Streaks in Bleached Walnut

We have a problem which we think one of your readers can help us to solve. We use a considerable amount of American walnut in fine cabinet work and some of it has to be bleached After bleaching, some of the walnut turns a pink color or has pink streaks, and no amount of bleaching will remove this color.

We will greatly appreciate your presenting this problem to your readers, in the hope that one of them may tell us how to remove the pink color. —P.J.W.Co.

The remedy for this is to make a green stain that will kill the red. From the way your questions reads, a weak NGR green stain, sprayed on, will handle the situation nicely. If the red is too pronounced, a stronger solution will be necessary, and the red streaks will turn brown. A little experimenting and the foreman should have it under control in a few hours —probably minutes.—FRED BOYNTON, Finishing Consultant.



PRATT & LAMBERT-INC.
Industrial Finishes
NEW YORK BUFFALO CHICAGO
FORT ERIE, ONT.

What to Do With Old Enamels

We have a quantity of white, also black, baking enamel which we have had on hand for two years, and it has started to emulsify. We have been told by the concern who sold us the material that it is worthless, as nothing can be done to restore it to its original state. The quantity we have on hand is such that if it cannot be made into some value, the loss will be considerable. We know you are familiar with problems of this type, hence this letter to you seeking information relative to the matter.—E. & M. Co.

I know of two ways in which you might be able to dispose of your white and black baking enamels, which may not involve too great a loss.

The first is to advertise them in INDUSTRIAL FINISHING Magazine, offering to send samples to anyone who might be interested. By sending samples, the persons interested can evaluate them to determine whether or not they are of any value to them.

The other is to send samples to consulting chemists or to paint manufacturers and ask them to determine whether they have any value. Your present supplier has indicated that they are worthless, and they may be. However, I would ask other manufacturers, because it is just possible they can be utilized. — ROLLIN H. WAMPLER.

Prevent Blisters in Baked Enamel on Aluminum

In reading the Questions and Answers in November issue, page 92, I notice that someone is having trouble with blisters in the baking process. I had this trouble also, until I found out how to eliminate it.

I use a black wrinkle finish on various shapes and forms of sand castings, and I am getting excellent results in the manner which I have found best.

The method I use is to first be sure that all grease and oil film is removed from the castings; then put the castings in an oven and heat them from six to twelve hours or for a reasonable length of time. I find that by painting them while they are hot, I can control the color and the amount of wrinkle that is desired.

The casting should be heated to a degree where it is necessary to handle with gloves, but not hot enough to burn the paint when it is applied.—L. J. Voss.

Red Cedar Association

To further the cause of perpetuating red cedar forests so that red cedar lumber will be available for the manufacturer of cedar chests and other red cedar products, the Aromatic Red Cedar Ass'n., and the National Cedar Chest Ass'n., have formed an organization called Joint Cedar Forestry, which at present is located in space 1729, 666 Lake Shore Drive, Chicago, Ill.

More Methanol Production

A new methanol production unit began operation during the last week of December at the Texas City, Texas, plant of Carbide & Carbon Chemicals Division, Union Carbide & Carbon Corp. Methanol is important as an intermediate, especially as a source of formaldehyde and as a general purpose solvent. The addition of these facilities is part of the company's long-range expansion program.

New Humidity-Temperature Test Apparatus With Program Control

Precisely controlled variations of humidity and temperature can be repeated periodically, according to predetermined program, by means of a new versatile test apparatus recently announced by the American Instrument Co., Inc., Silver Spring, Maryland.

Standard apparatus provides three humidity-temperature program schedules of interest to government laboratories and manufacturers supplying equipment to the government. Details are given in manufacturer's Bulletin 2176, which is available upon request.

THESE NEW

JOHNSON *Sand-Air*

AIR-DRIVEN, RECIPROCATING-TYPE SANDING MACHINES

CUT FINISHING COSTS

IMPROVE OPERATOR EARNINGS

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LONG-SERVICE LIFE

S-5 LIGHT OR MEDIUM SANDING OR RUBBING

S-9 GENERAL PRODUCTION FINISHING

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4

TYPES OF SYNTHETIC FLAT FINISHES TO CONFORM TO YOUR NEEDS . . . POCKETBOOK

DRYING SCHEDULE

- **FULL RANGE OF SHEENS . . .** from dead flat to gloss
- **NO DULLING OR CLOUDY FLATTENING AGENTS** added
- **A BEAUTIFUL RUBBED EFFECT . . .** will rub clean and clear
- **WILL EITHER AIR OR FORCE DRY**
- **OUR SUPERIOR PROCESS IN CHEMICALLY TREATING RESINS DEVELOPS A FINISH SO SMOOTH . . . YOU CAN FEEL THE DIFFERENCE**

1. **PERLAC SATIN FINISH** . . . out of the dust in 5 to 7 minutes . . . one coat looks and rubs like two coats of lacquer . . . liquor proof . . . water proof . . . won't haze or sweat back.

2. **PERFEX SATIN FINISH** . . . quick set . . . quick dry . . . water proof . . . liquor proof . . . full smooth body . . . won't haze or sweat back.

3. **PERFECTION SYNTHETIC FLAT FINISH** . . . water proof . . . liquor proof . . . beautiful rubbed effect.

4. **PERFECTION QUICK DRY FLAT VARNISH** . . . beautiful . . . rubbed effect . . . or rubs well . . . smooth.

PERFECTION PAINT & COLOR COMPANY

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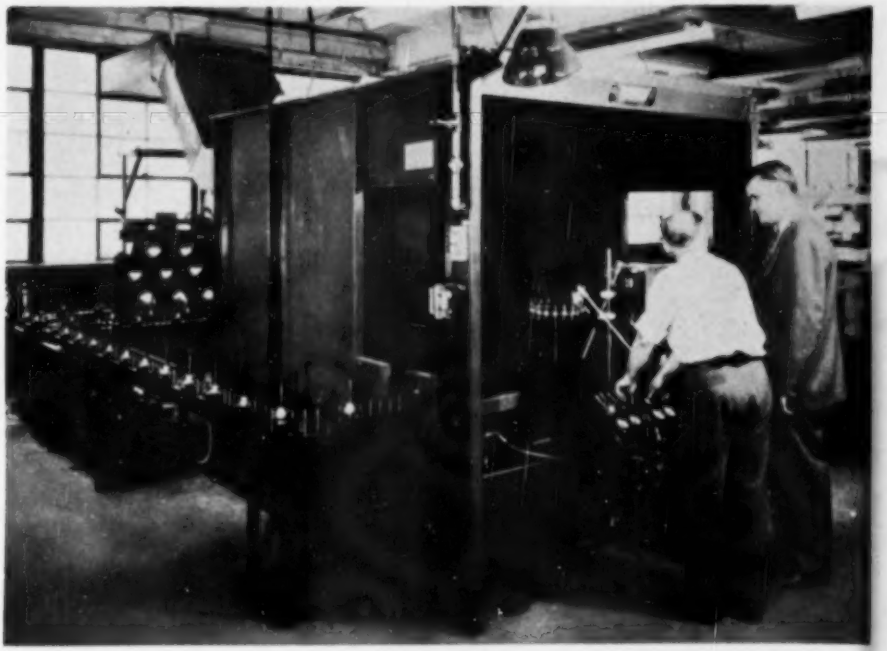
Perfection SYNTHETIC FLAT FINISHES

WATER PROOF . . . LIQUOR PROOF



An automatic spindle machine for painting or finishing round, cylindrical or irregularly shaped objects. The parts or products to be coated are mounted on conveyor spindles which rotate as they move along in front of automatic spray guns; adjustable for perfect results.

Crown Wittenberg Chemical Corp. Appoints G. E. Hand

The Crown Wittenberg Chemical Corp., Long Island City, N.Y., announces the appointment of George E. Hand as vice president. Mr. Hand was formerly sales manager of the Crown Oil Products Corp. He has spent all of his business life promoting the sale of drying oils and is considered to be an authority in the field. He has also had considerable experience with synthetic resins, particularly alkyds.

Hercules Expands Dallas Office

The industrial growth of the Gulf States Region has prompted Hercules Powder Co. to expand the Dallas office of its Naval Stores Department. The Dallas office, located in the Gulf States Building, will now handle the sales of turpentine, pine oil, rosin, and rosin and resin derivatives as well as toxaphene, a chemical base for agricultural insecticides. These products are derived by Hercules from the southern pine.

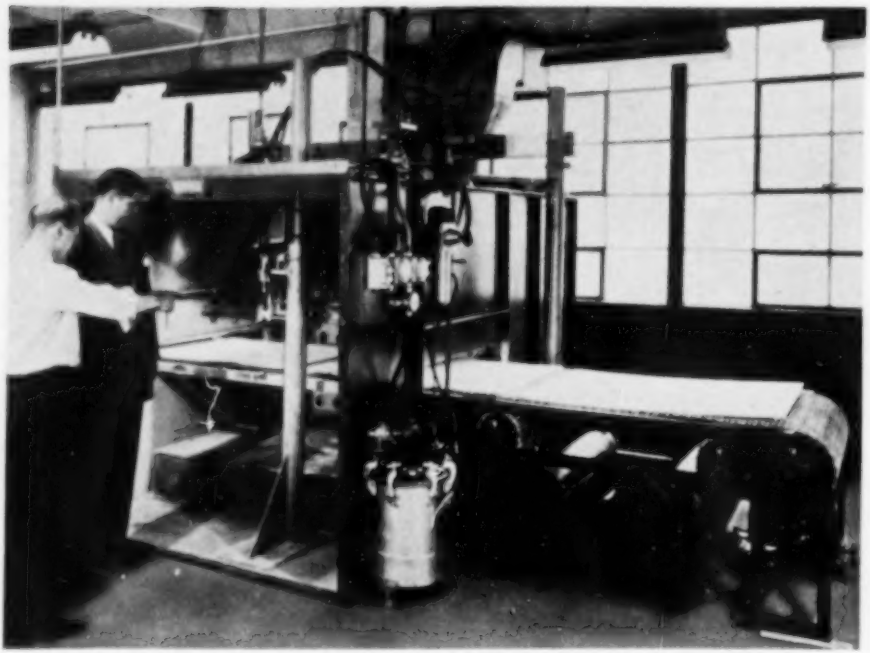
Finishing Methods Research Offered by Binks Mfg. Co.

A new methods consultation service offered by Binks Mfg. Co. (spray equipment) has been set up for the purpose of enabling any user or prospective user of finishing equipment to find out whether part or all of his products can be profitably spray finished automatically.

Manufacturers are invited to send in samples of their products for trial finishing. Without obligation, Binks will determine whether or not the product can be finished automatically. If so, a report will be given showing the probable production cost based upon actual operation.

Binks new Finishing Methods Research Department is equipped to run comprehensive tests on actual products, using the latest standard automatic and manual spray finishing equipment.

Included in the department is an automatic reciprocating machine for finishing flat products—everything from tea tiles to table tops—and an automatic spindle machine for finishing round, cylindrical, or multiple-sided products. Such parts are rotated in front of spray guns. Various adaptations of these machines



Automatic reciprocating machine for painting or finishing all types of flat surfaces; the spray guns can be adjusted to produce a film of uniform thickness and perfect smoothness.

make possible the finishing of an amazingly wide range of articles—everything from golf balls to automobile wheels—at low cost.

According to announced plans, the new department will devote its full time to helping manufacturers reduce finishing costs and improve quality. It's purpose is to effect substantial savings for concerns, who otherwise would have to carry out their own experimental developments. Still greater savings will be made by those who find that automatic equipment is available for finishing their particular products.

For complete information regarding the use of the facilities of the Binks Customers' Research Department, write to the Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill.

Luminous Name Plates

The United States Radium Corp. announces that it has increased its engineering and plant facilities for the design and manufacture of etched and lithographed metal name plates for machinery, motors, instruments and other equipment. Self-luminous, fluorescent and phosphorescent plates, as well as all varieties of precision nonluminous plates, can be supplied.

General data, and information on specific problems, are obtainable from U. S. Radium's offices, 535 Pearl St., New York City 7, N.Y.

The company has been manufacturing name plates for many years, as an adjunct to its business as a leading producer of luminous dials for watches, clocks and other instruments, but it now is expanding the plate-making phase of its operations.

W. A. Munkacsy, Now President of Two Cleveland Firms

William A. Munkacsy was elected president of Munray Products, Inc., sales division of The Poly-Cyclo Products Co., 12400 Crossburn Ave., Cleveland, Ohio, at a special meeting held by the board of directors. Mr. Munkacsy is also president of The Poly-Cyclo Products Co.

Munray Products Co. sells corrosion resistant materials and equipment; organic coatings; industrial finishes; adhesives, etc., manufactured by The Poly-Cyclo Products Co.

Get higher solids concentrations, while retaining workable viscosities, with Ketone Solvents. They help you meet the trend towards high solids lacquers that reduce both material and application costs at the spray booth.

Essential solvent data in handy chart form for your desk file or plant notebook.

Opens to double-page size without being removed from binder. Reverse side presents graphical relationships of solvent properties. You'll USE this chart! Write for your copy.

Have you heard the *full* story on the cost-cutting advantages of Ketone Solvents? Call your Shell Chemical Representative and have him point out factors that will enable you to profit by the competitive advantage of Ketone formulations.

SHELL CHEMICAL CORPORATION

Eastern Division: 500 Fifth Avenue, New York 18 **Western Division: 100 Bush Street, San Francisco 6**

LOS ANGELES · HOUSTON · ST. LOUIS · CHICAGO · CLEVELAND · BOSTON · DETROIT · NEWARK

Vinyl-Cote; Tank Lining

A new plastic coating for petroleum and chemical tanks is announced by the Glidden Company, Cleveland, Ohio.

Called Vinyl-Cote, the new coating is an impervious tank lining which does not blister and which eliminates the peeling common to old-style plastic coatings. Field tests show that it combats corrosive gases and fumes.

Vinyl-Cote's important new properties are derived from the vinyl copolymer resins used in its production. They give it wide flexibility and amazing resistance to caustic, sour crude and most acid solutions. The new coating is almost totally unaffected by oils, greases and petroleum solvents and stands up well against aromatic solvents. It is readily soluble in the ketone and ester group of solvents and its resin films will not withstand operating temperatures above 180° F.

Vinyl-Cote is a five-coat system, with each coat a different color, and should be carefully applied under the proper conditions. Glidden specifies the thickness of each coating, although this is simplified through the use of different colors. When the coat being applied completely covers the previous coat, the proper thickness has been attained.

The first test applications of Vinyl-Cote were made nearly three years ago in actual tanks in the Gulf Coast and midwestern oil fields, and today the coatings are still in excellent condition.

Additional details may be obtained from the Glidden Company, 11001 Madison Avenue, Cleveland 2, Ohio.

Lubricates Conveyors Automatically

To lubricate the trolley wheels of overhead conveyors or the moving parts of any type of conveyor or other equipment, an automatic lubricator unit has been developed by Paasche Airbrush Co., 1909 Diversey Parkway, Chicago 14, Ill. These units are completely automatic and they give safe, sure and efficient means of lubrication for small and large surfaces in continuous operation.

After initial adjustment they require no further attention other than reservoir filling which is determined by the speed and operating characteristics of the equipment itself. Each unit delivers the exact amount of lubricant necessary at the exact location desired, without misting. This means savings in both labor and lubricant, and the assurance that each bearing is always properly lubricated. The lubricated equipment operates smoothly, bearings and dies last longer, and in some cases production can be speeded up.

Lacquer Finish for Plastics

A new dual purpose lacquer known as "Base XC 14", for use on both cellulose acetate and cellulose acetate butyrate, has been developed by United Lacquer Mfg. Corp., Linden, N.J. and Everett, Mass., manufacturer of industrial finishes.

Rapid growth in the plastics field

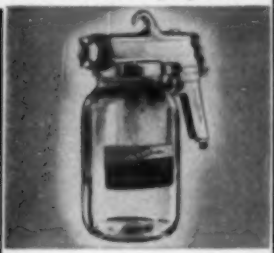
SPRAY IT— Better, Faster, For Less!

BLACK

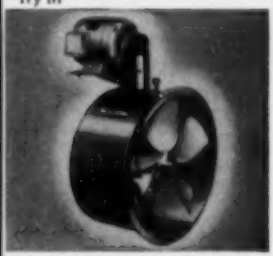
Better equipment means more profit from spray operations. Specify Black Arrow . . . famous for "HOLLOW AIR" Spray Guns.

Black Arrow "HOLLOW AIR" Spray Gun. The finest all-around, all-purpose gun in use today. Try it!

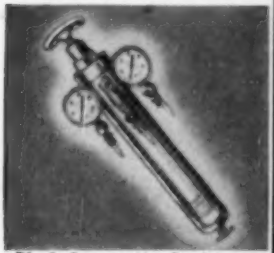
Black Arrow Siphon Feed Outfit. Complete with "HOLLOW AIR" gun, container, air regulator and purifier, hose and wrench.



Black Arrow FIBR-GUN. The only "finished" FLOCK gun on the market. All three controls at rear of gun.



Black Arrow Exhaust Units. Range from 12" to 42" diameters — meet all Underwriters' specifications.



Black Arrow Air Conditioners. All price ranges—the only make fabricated of 100% non-rusting materials.

Black Arrow General Utility Spray Gun. Lightweight, efficient —operates at minimum pressures with low air consumption.

Black Arrow Compressors. All sizes and models, portable and stationary—1/3 to 15 H.P., single and two stage.

Black Arrow Pressure Outfits. Range from two to fifteen gallons. Complete in every detail.

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The Black Manufacturing Co.

Parkton 73, Maryland

BLACK

has required considerable laboratory research to develop finishes to meet the individual requirements of manufacturers who produce products ranging from dolls to fishing lures, which are made of cellulose acetate and cellulose acetate butyrate. Nearly 40% of the toy industry's sales during 1949 were for items made of plastics.

Laboratory tests for Base XC 14 were conducted by one of the nation's largest manufacturers of cellulose acetate and cellulose acetate butyrate molding composition. The firm reported that XC 14 was applied on these plastics and maintained at 100° F. and 80% relative humidity for 72 hours, after which the condition of the lacquer on all 12 variations of these plastics was "hard, smooth, excellent adhesion". The laboratory reported XC 14 "to be an excellent lacquer" for both types of plastics.

Base XC 14 is available in a clear finish or in colors in any desired sheen; it air dries in a few minutes.

Production of Chromic Acid

Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J., is now shipping Chromic Acid Flake, Technical Grade, produced in newly installed electro-chemical equipment at its Newark plant. Analyses by independent testing laboratories indicate that the new product is low in chlorides, sulphate and insolubles, and exceeds U. S. Government Specification An-A-21,

Shipping container of chromic acid flake.

Chromic acid production is the first of a series of steps being made by Better Finishes & Coatings, Inc., to expand its line of finishes, peelable plastic coatings, stop-off and masking compounds, etc., being made for the organic finishing, electroplating and metal-working industries.

Hoffman Scratch Hardness Tester

A pocket-size tester that fills the need for an easy-to-handle small instrument for testing scratch hardness and adhesion of industrial product finishes has been designed by E. E. Hoffman of the Industrial Finishes Division, National Paint, Varnish and Lacquer Association, 1500 Rhode Island Ave., N.W., Washington 5, D.C.

The instrument provides dependable determinations of the pressure on the scratching tool because the reliable lever system reduces friction to one pivot; (see illustration attached).

The scale of the instrument is graduated from O to 20; each division equals 100 grams, permitting readings up to 2000 grams with a standard rider (weight) and up to 3750 grams with two sandard riders. It provides results of accuracy comparable with those obtained with the larger and heavier instruments.

The small size of the instrument makes it easy to carry about when it is desired to test the surface of parts too large to handle in the laboratory.

For testing scratch hardness, all four wheels of the instrument are placed on the finished panel or surface and drawn in a straight line across the film, using sufficient downward pressure to keep the wheels in

25

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IN

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BARKER

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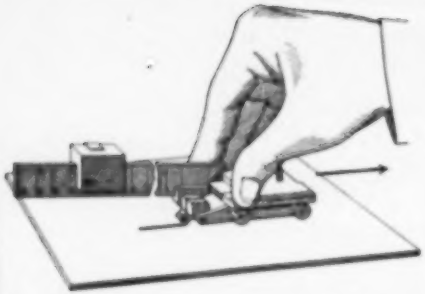

The tester is drawn from left to right.

contact with the surface. The scratching tool must follow the carriage. Tests are repeated, increasing or decreasing the weight on the scratching tool, until a just perceptible mark is made. Or, the size and character of the mark on various finishes with the same load on the scratching tool are compared. The surface must be reasonably level, but it is not necessary to use a level on it.

For testing adhesion, the procedure noted above is followed, but the weight on the scratching tool is increased until it breaks through the finish film and exposes the base surface. At this point the adhesion reading is noted.

The instrument evaluates dried finishing films, and insures dependable determinations in control testing.

New Gun Cuts Mastic Spraying Time

A new type spray gun that has been designed and engineered to cut time and labor costs of spraying heavy mastic coatings by 75%, is announced by the A. Shelburne Co., 739 Ceres Ave., Los Angeles, Calif., manufacturer of spray guns and spray gun equipment.

Named the Shelburne Model 105, the gun features a new, larger diameter of the nozzle head which permits delivery of a greater capacity of air-material flow for spraying heavy fibrated or granulated materials without the necessity of thinning. According to the manufacturer, in actual tests on record this new gun does the job in one-quarter of the time that was previously required.

The 105 spray gun has a proven fan spray pattern of 14-in. and larger which is easily changed from fan to round by a simple adjustment without necessity of changing air caps. A special material handling pump drives the unit which permits forcing of the material direct from the drum to the spray gun.

Despite its large nozzle design, the new gun is lightweight, easy to handle, and has a straight line trigger for easy, 4-finger operation.

Circulating Paint Heater Sprays From Paint Container

A new circulating-type paint heater that enables an operator to spray directly from the paint container, without the use of a pressure tank, is announced by Bede Products Inc., 4311 Ridge Road, Cleveland 9, Ohio.

Paint is pumped through the heater directly from the paint container by a circulating pump especially designed for hot spray; paint circulates from the Underwriters-approved heater to the spray gun and return. The explosion-proof heater heats the paint to any desired temperature, generally to 180° F., to obtain better quality films with fewer rejects, and to cut paint, thinner and labor costs.

Among the several merits of the new system is the ease of paint handling, since the separate operation of filling and handling presure tanks is not necessary. Extra equipment is eliminated, paint color changes are easy to make, and smaller quantities of paint can be used. Circulating the

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Industrial Finishes

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YARNALL PAINT COMPANY
INDUSTRIAL DIVISION
PHILADELPHIA 48, PENNSYLVANIA

heated paint makes possible accurate temperature control at the spray gun.

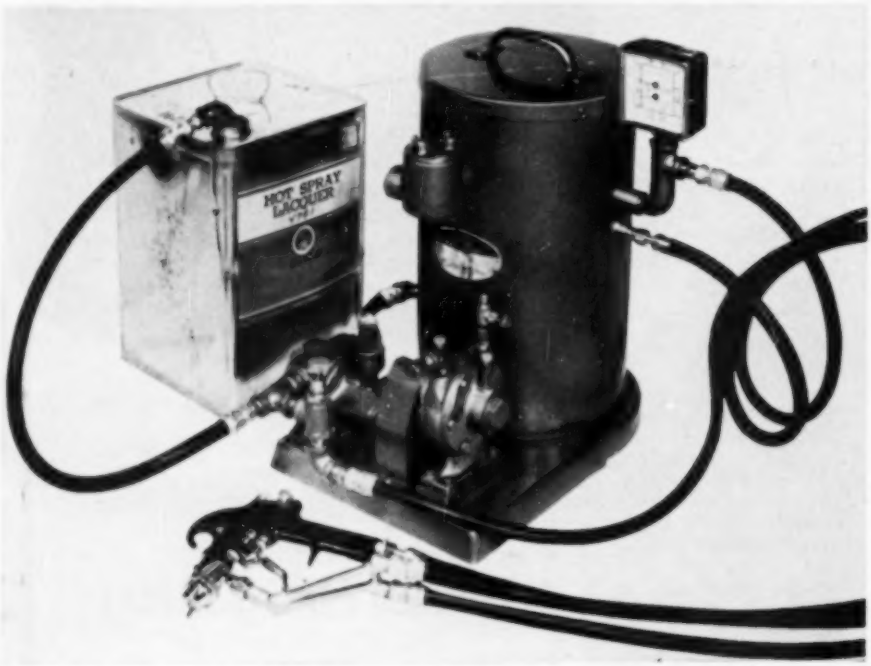
Paint pressure and temperature are adjustable, and a gauge on the paint supply line to the spray gun shows these values at all times. Paint is heated by two 1000-watt cartridge type heaters, with temperature controlled to within ½° of any setting by a thermostat. Fluid pressure is accurately regulated by a pressure regulating valve on the paint line from the gun to the heater.

Aluminum is used as the heat transfer agent, thereby eliminating heat transfer liquids which can decompose under heat; or water which can deposit lime in the tank or leak. The heater comes up to operating temperature within 15 minutes, and requires no attention once it is started. An extra set of coils is provided for heating atomizing air in winter time if necessary.

The fluid pump is gear-driven by a ½-hp. explosion-proof air motor, and operates at slow speeds for longer life. An important feature in the pump design is the use of a mechanical seal, lubricated by a solvent-resisting grease, which prevents premature wear of the shaft due to clogging of paint.

Electric Safety Switches

A new folder that gives the latest information about HCI (High Capacity Interrupter) safety switches is now ready for distribution, according to The Trumbull Electric Mfg. Co., Plainville, Conn.



Material is pumped directly from shipping container and through the paint heater to the spray gun. What isn't sprayed is recirculated through the heater, therefore uniformily heated varnish, lacquer or synthetic finishing material is always available at the gun.

If you are looking for a faster way to mark products . . .

CONSIDER SILK SCREEN PRINTING . . .

Almost any product, from tractors to ash trays, can be marked directly, quickly and attractively. Economical for large and small designs in any quantities. Silk screening give clear sharp detail and a tough permanent finish that withstands handling, abrasion, outdoor exposure.

We have photographic plates, stencils, inks, lacquers, enamels—everything you need for silk screen work. A silk screen department costs very little to set up and pays for itself many times through faster production.

Write Department IF 2-50 for further information

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FINISHES FOR THE PRODUCTS OF INDUSTRY

NEOPRENE COATINGS VINYL FINISHES

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NEW CASTLE, DELAWARE

Pioneers in* NEOPRENE *and* VINYL *Products

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NEW and better

BFC LACQUER THINNER

with these extra values at no extra cost

Better Solvent Strength—You can use higher-solids
Better Flow Out—Less Orange Peel—Less Blushing
Better Gloss in Your Coatings.

Chances are that BFC LACQUER THINNER costs no more—possibly less—than you now pay. You have everything to gain—nothing to lose—by getting our price and special Test-Sample Offer. Write today.

Better Finishes and Coatings, Inc.

268 Doremus Avenue, Newark 5, N. J.
122 East 7th St., Los Angeles 14, Calif.

W-S Quick-Bake White

New quick-bake finishes which will cure in 3 to 7 minutes, have been developed for the metal decorating industry according to an announcement by The Watson-Standard Co., 225 Galveston Ave., Pittsburgh 12, Penna. These new litho systems include sizes, base whites and wet print finishing varnishes for application by the roller-coating method. Baking cycles of 3 to 7 minutes may be used with results equaling older conventional baking cycles of 10 to 30 minutes.

The outstanding feature of these coatings is that they will cure properly in quick-bake cycles and also may be adapted to conventional longer cycles without discoloration. The physical properties of these finishes are comparable with high quality conventional baking rollercoating finishes. Standard thinners of the high flash or mineral spirits type may be used. These coatings have good adhesion, good fabrication including the cold temperature fabrication, excellent depth, good tumbling resistance and good flow.

Shelburne Appoints New Salesman

The A. Shelburne Co., Los Angeles, manufacturer of spray guns and spray gun equipment, announces the appointment of Robert H. Armstrong as sales representative for the Southern California territory. Mr. Armstrong will represent the company's complete line of spray equipment to the industrial and contracting field.

Electric Spray-Bake Conveyor Finishing Machine

A production finishing machine that is particularly well suited to processing large quantities of fine products (compacts, pencils, clock cases, etc.), is announced by The Capitol Machine Co., 36 Balmforth Ave., Danbury, Conn.

The machine was developed to take full advantage of the new high-bake synthetic materials in finishing cosmetic cases. Its efficient, economical operation led to the development of larger machines. With this hard, high-bake enamel, parts 12-in. in diameter and 4-in. deep, with irregular shapes or ornamental designs, can be finished in large quantities at low cost.

Principles involved in the machine's design are carefully regulated to the specific requirements of a broad field, which includes applying lacquer and enamels in either clear or color. The operation can be closely regulated in regard to time, temperature and depth of covering.

Particular attention was given to design where cleaning and maintenance are concerned, to eliminate much of the time usually wasted in cleaning automatic enameling equipment.

Another plan kept in mind by the designers was to make the machine flexible so that any type of part can be finished without expensive changes to suit work that may be required in the future. This equipment is most efficient where large production schedules of quality finishing are required.

The factory where these machines are built maintains a demonstrator in its laboratory where the customer may

Easy—the Finisher that Experience Built!

For over ten years, *Easy* Finishers have proven themselves on thousands of finishing and re-finishing jobs. We worked side by side with you to learn just what features you wanted. We then devoted years designing, testing, proving this NEW Model DF *Easy* Finisher. It's the first finishing machine *built by experience* to give you everything you need for maximum efficiency—with trouble-free low cost maintenance.

Only *Easy* Gives You:

VIBRATIONLESS ACTION—Revolutionary new mechanism purrs like a kitten, as velvety smooth as an electric drill.

POSITIVE DRIVE—Regardless of the pressure applied, you still get the full stroke of the sanding or rubbing pad.

LARGE PAD—Takes full third of standard abrasive sheet—5 sq. in. larger than earlier models, twice the working area of some sanders.

CORRECT WEIGHT—A production unit, not a hobby toy. Heavy-duty parts mean longer life and dependability.

LEVELIZER—Means uniform cutting over entire surface of sanding pad.

STRATE-LINE—There is no substitute for EASY's straight-line back-and-forth action. No cross-grain cuts, sands up to moldings safely.

For complete story of these and other outstanding EASY features, send for bulletin or call your dealer or jobber.

Removing scratches, grinder marks and restoring mill finish on stainless steel. Ideal for sanding plaster cast on castings.

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7439 W. Davison • Detroit 4, Mich.

Name_____ Title_____
Company_____
Street No._____
City_____ Zone____ State_____

bring in or send in his parts to be processed before any time is wasted in finding out whether or not this equipment is adaptable to finishing his products satisfactorily and economically.

Aluminum Enamel Packaged in Aeropak Spray Gun

The Permite Paint Division of Aluminum Industries, Inc., Cincinnati 25, Ohio, is now packaging its Permite Chrome Finish Aluminum Paint in a handy 12-oz. size Aeropak Spray can.

Sprays directly from small container.

With this freon propelled package, the user simply presses the valve at top of the can, and aluminum enamel is sprayed on the surface of the article in a smooth brilliant coat. The aluminum enamel is of proper spraying consistency, and will not clog as it passes through the nozzle. The enamel withstands heat up to 450° F., and resists cold, moisture, steam, fumes, acids, etc.

Adjustable, Portable Bank of Infra-Red Lamps

Miskella calls it his No. 700 Infra-Red Porta-Flexer. It is an adjustable frame, light in weight and non-tipable that supports a bank of infra-red heat lamps, which may be used for heating, drying or baking. Heat may be directed at any angle, up or down, in or out. It is available in five sizes.

Adjustable to any position. Can be used as single or multiple. Five different sizes.

All lamp panel faces are semi-porcelain white enameled. The framework folds into a small compact unit for shipment in a paper carton. Lamp panels may be flat or sectional and curved. It is a product of The Miskella Infra-Red Co., E. 73rd & Grand Ave., Cleveland 4, Ohio.

Free Courses on Furniture Finishing

Mr. E. W. Hagadorn, president of Finishine Laboratories, Inc., 627 Tallman St., Syracuse 4, N.Y., plans to hold classes of instruction for furniture finishers and repair finishers in Detroit, Chicago and Cincinnati, this spring. These courses are free. Dates will be announced later.

FLOCK

Short-cut fibres of all types used to produce effects of suede, felt, velvet, mohair, velour, carpet on any surface in an economical manner.

Let our 25 years experience
be your guide to quality
results at lowest possible cost.

Rayon Processing Co. of R. I. Inc.

PIONEER PRODUCERS OF SURFACE COATING FLOCKS

55 MOSHASSUCK STREET PAWTUCKET, R. I.

POLLAK PAINT CO.
715 Main St.
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79 Sudbury St.
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409 16th St.
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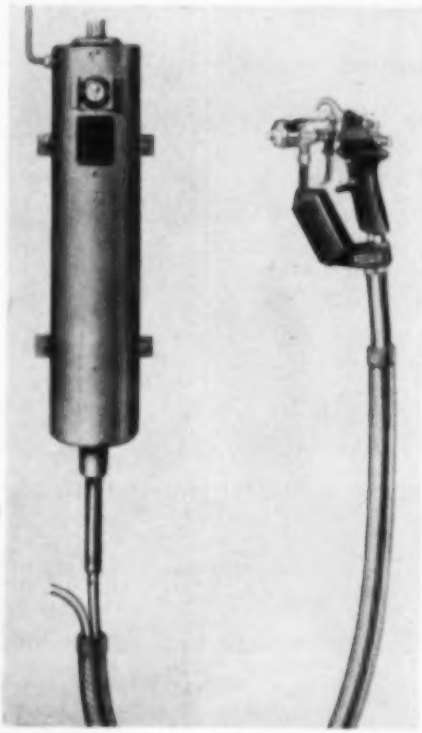
Therm-O-Spray Method (Hot Lacquer System)

Therm-O-Spray, according to the manufacturer, is "a simple and effective attachment for hot spray painting". Both the paint and the air are heated. In the accompanying illustration the air heater is at the left while the paint heater is directly below and attached to the spray gun.

The manufacturer states:

1) The paint heater has a heating capacity up to 20-oz. of paint per minute. It is light in weight and is connected directly to the spray gun so that its center of gravity lies near the gun handle, this providing for good balance.



At left, the air heater; at right, spray gun and material heater.

2) The electric air heater output is 1000-watts for operating on AC. There is a pilot light and an adjustable thermostat to regulate air temperatures between 170° and 300° F.

3) A leather cover is attached to the spray gun handle for insulation purposes.

4) A special air valve with bleeder holes is installed in the regular spray gun, in place of the non-bleeder air valve used previously. This new bleeder valve permits air to circulate through the paint heater and spray gun during spraying intermissions, thus enabling paint temperatures to remain constant.

5) Twelve feet of air and paint hose are provided as one unit. The larger extension of approximately two feet of this unit is to be connected to the air heater; the other extension of approximately three feet is to be connected to the pressure feed tank.

Therm-O-Spray has been thoroughly tested for clear and pigmented lacquers, enamels, oil paints, etc., over a long period of time by various industrial groups including furniture manufacturers.

The merits of spraying materials hot with this equipment are listed as follows:

1) Fewer coats of paint.

2) Paint flows easier and gives a glossier finish.

3) No thinner, or less thinner, used.

4) The resulting paint film is tougher and has greater resistance.

5) The spraying air is free of any moisture.

The sole sales agent for this product is Douglas Wilson & Co., Inc., 101 Park Ave., New York 17, N. Y.

Technical Specialties Company

Technical Specialties Co., Manufacturing Chemists, Wilmington, Dela., announces the appointment of Allen Field, 17 Bergen St., Brooklyn, N.Y., as its sole sales agent.

Shipping Protection!

Polyken® No. 158
NON-STAINING TAPE
for BAKED ENAMEL SURFACES

Here's a strong, non-staining, protective tape made especially for shippers of enameled goods. POLYKEN No. 158 holds movable parts firmly in place during shipment, yet pulls off *clean*, leaving absolutely no stain or discoloration!

POLYKEN No. 158's tensile strength is 46 lbs. per inch of width and the tape pulls off clean at temperatures up to 180° F. It can be safely used on a wide variety of white and pastel finishes (alkyd, urea and nitrocellulose lacquers).

For Free Samples, or for free laboratory test on your finish, write today to POLYKEN, Dept. 4-2, 222 W. Adams, Chicago 6.

TYPICAL USES FOR #158 TAPE

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Hospital Equipment

Kitchen Equipment

Polyken®
INDUSTRIAL TAPE

DEPARTMENT OF
BAUER & BLACK
DIVISION OF THE KENDALL COMPANY
222 W. ADAMS ST., CHICAGO 6

Reduce Reject Costs by Frequent Inspection

Every plant has rejects. We will continue to have them as long as human beings have anything to do with finishing the product. Even purely mechanical operations produce rejects occasionally due, sometimes, to irregularities in materials, or because of equipment that gets out of adjustment.

So if we cannot eliminate rejects entirely, let's strive to reduce their percentage. Frequent and thorough inspection will enable us to discover them before additional time and materials have been wasted on them.

If the finish on a piece must be stripped or repaired, the sooner it is discovered and removed from the production line, the less the cost will be. Frequent inspection stations, manned by capable efficient inspectors, really pay off.

Salt Spray Corrosion Tests

The United States Testing Co., Inc., 1415 Park Ave., Hoboken, N.J., announces the installation of a new Salt-Spray Corrosion Test Cabinet.

Salt Spray testing is used by electroplating companies and buyers of coated or plated metal and metal parts, paint or lacquer laboratories, preservative oil and grease compounders. These tests are designed to determine the corrosion resistance qualities of electroplated or coated metal, alloys, metal parts, lacquered or painted samples, etc.

The United States Bureau of Standards recommends the salt spray test for this type of examination. The United States Testing Co.'s salt spray cabinet has been constructed to meet the requirements of Federal Specifications governing the inspection of metals. Salt spray testing is the standard by which rust resistance is measured.

Order in "Plastic Paints" Case

Misrepresentation of so-called "plastic" paints and varnishes is prohibited in three cease-and-desist orders recently issued by the Federal Trade Commission. The respondents are located in Pittsburgh, Philadelphia and Chicago.

Under terms of the orders, all respondents named are forbidden to represent that any of their products are "miracle" paints; that they differ substantially, in composition or otherwise, from many other good quality paints on the market; or that they will not crack, blister or peel.

The orders against two individuals also ban representation that their products are the result of new discoveries; that they have the same properties as molded plastic products; that they produce a "lifetime" finish or one that will last for any substantial time beyond that which may be expected from other good quality paints; that they hold their color or luster under all conditions; or that one coat of any of the products is equivalent to a multiple number of coats of other good quality paints.

The Commission said that the evidence, including reports of tests by the Bureau of Standards, showed that all of these claims were false and misleading.

Each of the complaints charged that the trade names of the products were also deceptive, but the Commission ruled that these allegations were not sustained by the greater weight of the evidence. It made a similar ruling on charges of falsity against certain other advertising claims.

Paasche Airbrush Co. Founder Now in His 70th Year

February 27th this year marks the 70th birthday of Mr. J. A. Paasche, founder of Paasche Airbrush Co., Chicago, Ill. Mr. Paasche, born and educated in Norway, came to this country in 1900 and obtained employment with an airbrush manufacturer in Chicago. His mechanical background included three years of apprenticeship as a gunsmith in Norway.

Mr. J. A. Paasche

In 1904 Mr. Paasche founded the firm that now bears his name. In the early days of business he put in long hours of work and he has always been on the alert to sense the need for, and then develop improved products. Mr. Paasche has to his credit more than 80 patents, some of them in lines other than airbrush work.

Many airbrushes in the Paasche line are used by artists for painting pictures and for skillful retouch work. The company also manufactures and services a line of industrial airbrushes and air-painting equipment for both manual and automatic operation.

The company's 45th Anniversary catalog of 24 pages, 8½ x 11-in., illustrates and describes its complete line of products.

Positive action of BARRETT TYPHOON CENTRIFUGAL WASHERS provides for quick, thorough parts cleansing

In these efficient centrifugal machines the washing solution enters the top of the whirling load under valve control. The operating principle—being that of a typhoon—gives the washing solution a spraying, swirling, and surging action which thoroughly permeates the contents. During this action, centrifugal force creates hydrostatic pressure within the work container. That proportion of the deluge going to the bottom is forced up the side and out carrying off the contaminated fluid.

A thorough, quick cleaning is definitely assured by flowing sequence. Two or more liquids may follow, making it possible to wash, rinse or provide any further treatment as required.

Several Barrett installations involve the use of four machines operated by one man who loads and unloads in three minute cycles. Washing time is only one minute. Another type of set-up provides for recovering oil, washing, drying, and coating with rust-proofing material.

As in all Barrett Centrifugal machines, provision is made for convenience and safety of operation.

Send at once for details of Barrett Typhoon Washer

THE LEON J. BARRETT COMPANY
Designers and Builders of Centrifugal Machinery
1703 GRAFTON ROAD WORCESTER 1, MASS.

NOW! Tack Cloth in Handy Rolls *or* Cut Bulk

Cut off any size piece and use as needed.

Already cut and folded, ready to use.

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will **stay** SOFT and TACKY until the very last bit is used up.

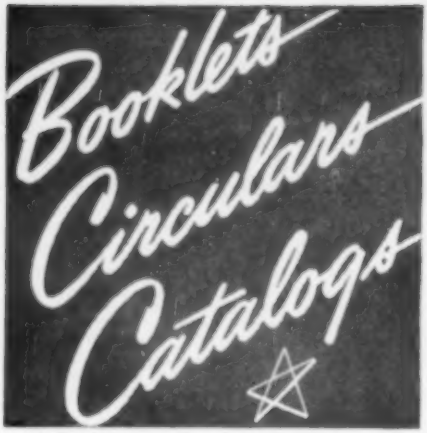
The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. **All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free.** It's clean and sanitary—there's no waste.

Write today for complete information, prices and samples.

Baughn Chemical Products Company
"The Tacky Wiper Specialists"
7027 N. RAVENSWOOD CHICAGO 26, ILL.

Also Individually Packed in Glassine Envelopes —144 to the Carton.

A WARRANTY OF SATISFACTION IN EVERY CARTON



Sand Blast Hose Bulletin

A new catalog section on its sand blast hose and hose used in butane and propane gas service has been published by The B. F. Goodrich Co., Akron, Ohio, and is available upon request.

Spray Hose Catalog

A new catalog section on its lines of spray hose has been published by The B. F. Goodrich Co., Akron, Ohio. Copies are available upon request. The section covers paint spray hose, of various types.

New Epichlorohydrin Booklet Available

A new revised 55-page booklet on epichlorohydrin has just been published and is now available on letterhead request from Shell Chemical Corp., 500 Fifth Ave., New York 18, N.Y. or 100 Bush St., San Francisco 6, California.

"White Magic", Dulux Movie

"White Magic," a 30-minute, 16-mm. sound movie in color, showing the latest techniques in the production, use and spray application of "Dulux" white enamel for home appliances, has been released by the Finishes Division of the Du Pont Company. Since "Dulux" was developed in Du Pont laboratories more than 20 years ago, it has become the most widely used finish for refrigerators and other home appliances.

The film was made on the production lines of nationally known manufacturers, as well as Du Pont plants in Toledo, Ohio, and Chicago, Ill.

Besides telling the story of how high quality finishes are made and applied, "White Magic" indicates how savings may be effected and the finish improved by using proper spraying technique. Hints of value to manufacturers and their paint crews are contained in the film. Showings to interested parties may be arranged by writing to E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

Vacuum Hose Bulletin

Industrial vacuum hose, which handles dust, abrasive scrap and toxic fumes in many industries, is pictured and described in the latest catalog section on the subject issued by The B. F. Goodrich Co., Akron, Ohio. Copies may be obtained by writing the company.

Joy Unitair Compressor Bulletin

The Joy Mfg. Co., Henry W. Oliver Bldg., Pittsburgh 22, Pa., announces a new 16-page, fact-packed bulletin on their WL-80 Unitair Compressors. This bulletin includes an easy-to-use selector chart, plus detailed section drawings and parts photographs illustrating economy and operating features.

Insulating Varnish Booklet

A new 12-page booklet titled, "Practical Factors in Applying Insulating Varnishes" is available from New York University College of Engineering.

The literature was prepared by Dr. Max Kronstein, Research Associate, Adjunct Associate Professor of Chemical Engineering, and covers the subject of electrical insulating varnishes thoroughly and presents conclusions based on broad experience in this country and in Europe.

Address requests for the new booklet to V. W. Palon, Bureau of Public Information, New York University College of Engineering, New York 53, N.Y. Enclose 25c per copy to cover production and mailing costs.

Upswing of Walnut Revealed in New Brochure

With more than 500 Walnut suites or groups of case goods available to buyers at the current winter markets, the "come back" of this traditionally popular cabinetwood is dramatically chronicled in a new folder entitled "The Return of the Native," just issued by the American Walnut Manufacturers' Association. Profusely illustrated with pictures of many of the current new suites in plain and figured American Walnut, the folder graphically traces the postwar resurgence of Walnut furniture from the low point in the early

Finishing Time Cut 55%

LARGE PARKING METER MANUFACTURER* MORE THAN DOUBLES PRODUCTION BY USING *ALPO-33A HAMMER FINISH*

*Name on Request

PROBLEM: Using a finish with the required properties called for a 20-minute drying time. Problem was to speed up production by finding a quicker-drying finish, with equal or better properties.

SOLUTION: Manufacturer sent sample parking meter to our laboratories. Extensive tests on samples sprayed with our Alpo-33A Hammer Finish, showed better weather and abrasion resistance than finish formerly used —AND, *finish dried in 9 instead of 20 minutes* at 275° to 300° F.

TYPICAL APPLICATIONS: Automobile heaters, water heaters, appliances, photographic equipment and loud speaker systems.

Thousands of formulae on hand in our files to solve your finishing problems. Extensive laboratory facilities and large technical staff ready to develop and test finishes on your products. Write today for Technical Data Sheet on Alpo-33A, or send your products for finish specification and for testing.

STANDARD VARNISH WORKS

ENGINEERS OF FINE INDUSTRIAL FINISHES

SINCE 1870

NEW YORK LINDEN, N. J. CHICAGO

forties when the major portion of available Walnut went into gunstocks for the Allied fighting forces.

Copies of "The Return of the Native" are available, on request, from the American Walnut Manufacturers Association headquarters, 666 Lake Shore Drive, Chicago 11, Illinois.

Chromium Chemicals Handbook Issued by Diamond

A fact-filled, 32-page handbook 8½x11-in., on chromium chemicals, clearly depicting their general use and diversified applications in more than 17 different industries, has just been prepared by Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14, Ohio.

Copies of this informative, interesting handbook on chromium chemicals, a valuable quick-reference technical guide to those plants using these materials, are available upon letterhead request.

Hibitite, Acid Inhibitor

A 4-page bulletin on the function and use of Hibitite acid inhibitor is available from Monsanto Chemical Co., St. Louis 4, Missouri.

The product is widely used in the pickling and cleaning of ferrous metals. It is said to be an excellent aid in producing clean, bright, high-quality products without excessive metal or acid losses.

The bulletin contains detailed instructions for inhibiting sulphuric, muriatic and phosphoric acids with Hibitite for pickling steels, removing metal coatings, cleaning equipment and for the protection of iron and steel.

Lacquers for Paper; Booklet

A basic data booklet on nitrocellulose packaging and paper lacquers, the result of extensive research, has been issued by Hercules Powder Co., Wilmington, Dela.

The new 32-page booklet includes a description of the formulations and materials used in the research and detailed results of the investigations. There are 16 charts and graphs that illustrate and sup-

Papers coated with many different compositions containing four different plasticizers and nine different resins, representative of those commercially available, were used in the tests.

Paper-coating properties investigated and reported on include flexibility, grease resistance, scuff resistance, color stability, and specular gloss. In each instance, the effect of the resin and plasticizer on these properties is described.

Sections on heat-sealing coatings and moistureproof heat-sealing coatings are also included in the booklet, as well as suggested starting formulations for paper-coating lacquers.

An explanation of testing methods and description of lacquer components, solvent, paper-coating method, and coating cycle used in the research are cited.

New York University Offers Courses in Finishing

The 1950 Spring Term, offering two different courses in Surface Technology, started at New York University in the second week of February and will end during the month of May. Classes are held in the evening, one day a week.

One course takes up "Fundamentals of Paint, Varnish and Lacquer Technology". It is taught by Elias Singer and costs $25.00.

The other course is called "The Technology of Organic Finishes and Their Applications", and is taught by Myron A. Coler. It costs $30.00.

For further information, write Division of General Education, New York University, 2 Washington Square North, New York 3, N.Y.

Brochure on New Vinyl Finishes

The new Gates Vinyl Finish and Coating Catalog, now off the press, is available for distribution to the trade.

Many of the industrial and marine applications of this coating are described in an attractive 2-color, 4-page brochure which is available upon request directed to Gates Engineering Co., Box 1711, Wilmington, Dela.

According to the brochure, "Gaco Vinyl is a true plastic protective finish and can be applied by any method". The finish has built-in toughness and abrasion resistance. These coatings are used by food and dairy industries . . . will not contaminate food or dairy products which come in contact with them.

THE LANLY CO.
INDUSTRIAL OVENS
755 PROSPECT AVENUE • CLEVELAND, OHIO
CONSULT US REGARDING: HEAT TREATING OVENS • CORE OVENS
PAINT OVENS • RUBBER CURING OVENS • AIR HEATERS, ETC.

Tack-Off Dust, Grit and Lint with a "DUST-ALL" Tack Rag before finishing

Specks of dust, grit and lint accumulating on surfaces to be finished, cause blisters and blemishes when painted over. For only a few pennies per job, your finishing department provided with "Dust-All" Tack Rags to wipe off, collect and hold this objectionable matter, can be assured of fine finish jobs.

Ask for further information on "Dust-All" Tack Rags for industrial use and for a sample.

Be sure to get the Tack Rag that comes in the Red Checkered Bag.

HARDING *Manufacturing Co.*
10620 Gratiot Ave., Detroit 13, Mich.

I. C. D. FORMULA NINE

NON-INFLAMMABLE « *wax free* REMOVER »

for paint, varnish, lacquer, baked enamel, adhesives

EASY TO APPLY—NO AFTER CLEANING

I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.

BRUSH CLEANER I. C. D. — non-infammable brush cleaner works fast . . does not injure nor loosen the bristles. Easy to use . . leaves the bristles clean as a whistle. Order a gallon can and convince yourself.

ORDER TRIAL GALLON AT DRUM PRICE

INDUSTRIAL CHEMICAL DEVELOPMENT CORP.
515 FLUSHING AVE. BROOKLYN 5, N. Y.

Industrial FINISHING Editorial

Value of a Quality Finish on Products

The National Paint, Varnish and Lacquer Association has launched an extensive advertising campaign, the object of which is to emphasize the importance and real value of properly selected finishes for manufactured products. The Association's present advertising is directed both to buyers and manufacturers of products. Each advertisement deals with a different product. Buyers' media are TIME and NEWSWEEK magazines. Manufacturers' media are INDUSTRIAL FINISHING and seven other industrial publications.

The first of six 2-page spreads to appear in INDUSTRIAL FINISHING during 1950 is presented in this issue. The left hand page of the first spread tells the story of a beautiful water-resistant finish for fine furniture. The right hand page shows pictures of an electrical transformer, an automobile and a portable radio. For each of these products the advertisement presents the finishing problem and then gives its logical solution.

This widespread publicity, directed to the general public and to manufacturers of various products, will make more people finish conscious. It will be of great value to all manufacturers of quality finishing materials and all of their customers and prospective customers. More people will become educated to appreciate the true value and possibilities of enduring finishes that protect and beautify so many products which are used or seen in everyday living.

When more people know the real value of quality finished products and when they are reminded of it with sufficient force and frequency, they will certainly demand merchandise on which they can be assured there is a dependable durable finish, as well as one that looks attractive at the moment; and they will be less inclined to be enticed away by the lower price tags on cheaply finished goods.

Salesmen in retail stores do not talk finish, that is, not specifically. They do not know much about it. They may say the finish is beautiful, it's rubbed smooth, it has depth, etc., but the prospective buyer can see all of that. This lack of finish education, on the part of the retail salesmen, is something the Association intends to correct. The appropriate sales points are being sent by direct mail to the manufacturers, to be passed along with other dealer aids to the retailers.

Readers of INDUSTRIAL FINISHING have something vitally at stake in this campaign and they can help it along by being identified with and talking up quality finishing and high quality finished products at every opportunity. All of the factors that enter into the production of beautiful and enduring finishes for every need—the materials, service, equipment and trained personnel—are now available.

Designs That Put Real Salability into Products

The design of any product is of utmost importance. Design affects cost of production, salability and utility. It is possible to coordinate these three factors into a design and come up with a product that is economical to

NO "BY GOSH" OR "BY GUESS" BUT . . .

SCIENTIFIC RESEARCH AND CONTROL

The laboratory pictured above is dedicated to research — to develop new products — improve our present ones — and assure uniformity of all our wood finishing materials through precise laboratory control.

RELY ON Gilbert Spruance production-line proven finishes. If you have a wood finishing problem — depend on our trained technicians — men who are long experienced — who are constantly experimenting, testing, improving — men capable of originating the exact product you are seeking.

We invite you to avail yourself of our talents — our experience — and wholehearted cooperation.

THE GILBERT SPRUANCE COMPANY
PHILADELPHIA 34, PA. • WINSTON-SALEM, N. C.

"Wood Graining"

ADDS

Eye Appeal

American Graining Plates are photographic reproductions of fine woods.

AMERICAN RICHWOOD PRODUCTS CO.

Graining Plate Division

104 E. Mason St., Milwaukee 2, Wis.

Stille-Young

LACQUERS
ENAMELS
FILLERS
PAINTS
STAINS

For Highest Quality Finishes
Beauty and Durability

STILLE-YOUNG

Manufacturers

2752 N. CLYBOURN AVE. • CHICAGO 14

produce, and which has the beauty and grace to attract buyers and give satisfactory service in daily use.

This is not always an easy task, nor is it one to be undertaken by inexperienced people. Too many products are the result of just one man's idea of what it should be, but this is not always enough.

Of course, every manufacturer does not have the financial means to maintain a research and control laboratory, where every phase of the product, from manufacture to daily use, is studied by a group of experts. However, there are many independent designers, and there are laboratories where this service is available at fees that practically any company can afford.

Perhaps sales and satisfaction could be increased and production costs reduced by having someone who knows, give the same products the once-over.

Work Simplification Reduces Shop Costs

Call it Work Simplification, Efficiency Engineering, Time Study and Incentive Plan, or what you will; finding the one best way of manufacturing a product nets down to discovering how to perform each operation with the most economical use of machinery and equipment in relation to time. Usually the best way is the simplest way, which means that changing manufacturing methods points toward increased efficiency and is bound to involve simplification of methods, equipment and layout.

For obvious reasons, therefore, the term Work Simplification is used to describe those procedures that are ordinarily followed in determining the one best way of manufacturing something.

Work simplification is a broad term used to describe a program of training

In Furniture Finishing...*Only*

SPECK-FREE GLOSS
WINS AND KEEPS BUSINESS

★ *That's why* **Detroit Non-inflammable "Tac-Rags"*, the smallest "cost" in the job pays the biggest dividends on sales.**

Experience proves

. . . Detroit Non-inflammable "Tac-Rags" give the fast, positive "pick-up" that produces speck-free surfaces.

. . . Extra speed, possible with Detroit Non-inflammable "Tac-Rags," gives a production advantage over less efficient methods.

. . . Exclusive *Non-inflammable** feature of Detroit "Tac-Rags" means they are SAFE. Products liability insurance assures you of freedom from fire hazard headaches.

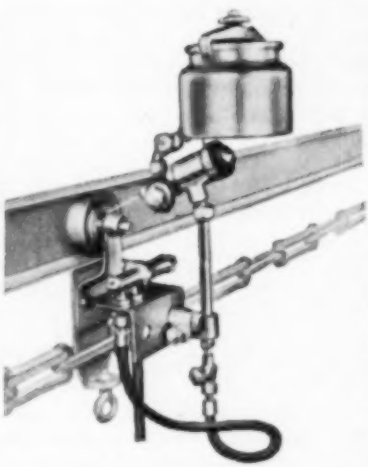
The standard of quality for over 15 years.

DETRO MFG. AND SALES CO., INC.
3429 Wesley St., Culver City, California

★ NON-INFLAMMABLE
INSIST ON ★ FAST ACTING
★ LONG LIFE

*An Exclusive Feature, Pat. Pending

DETROIT "TAC-RAGS"*
Available from your local paint dealer or write for name of nearest supplier.



Paasche AUTOMATIC LUBRICATING UNITS

SAVE . . . time
. . . labor
. . . lubricant
. . . waste

Assure PROPER LUBRICATION *Automatically!*

For lubricating trolley wheels of overhead conveyors or the moving parts of any type of conveyor or other equipment. This automatic lubricator unit affords a sure and efficient means of lubrication for small and large surfaces in continuous operation. Each unit delivers the exact amount of lubricant necessary at the exact location desired, without misting. Descriptive literature on request.

Paasche Airbrush Co. 1917 Diversey Parkway
CHICAGO 14, ILLINOIS

INFRA-RED OVENS *Individually engineered in stationary, conveyorized, portable or special designs*
(Lamped or Lampless)
Manufactured by
THE MISKELLA Infra-Red COMPANY
Main office: 7305 Grand Ave., Cleveland 4, Ohio

SOLVENTS RECOVERED BY
THE LOFGREN PROCESS
We RECOVER YOUR
SOLVENTS & THINNERS
From Wash Thinners - Spoilt Lacquers - Degreasing Machine Sludge, etc.
Each customer's shipment, whether one drum or a carload, receives PROPER AND SEPARATE TREATMENT. Write to:
SOLVENTS RECOVERY SERVICE, INC., 101 Central Ave., Westfield, N.J.
or—HAMMOND
SOLVENTS RECOVERY SERVICE
241 Brunswick St., Hammond, Ind.

whereby a group of people are taught certain principles and techniques which they then apply to their own jobs in order to reduce waste of manufacture, materials and also machine capacity.

Since it is a broad term, it is readily understandable that some members of management personnel have failed to interpret it correctly. From pictures showing analysis of simple jobs, such as inspection of small parts, photographs of small hand assembly jobs, they may have narrowed the meaning of "work simplification" down to include only these simple operations; they may fail to see its possibilities when applied to the plant as a whole.

The reason for showing moving pictures of the *before* and *after* work simplification of such jobs is that this detail is much easier to photograph and describe than would be a complete process involving changes in layout, design of equipment, or material handling methods. It should be borne in mind that these examples are included as a means of illustrating the use of basic principles and techniques; they should not be interpreted as indicating the scope of application for work simplification.

The field of work simplification is unlimited. It can be used in any and every department of industry. It can be used in agriculture, in transportation, in schools and on the ships at sea—wherever there is activity.

A few examples will serve to indicate the scope and variety of ways in which it may be employed. A concern of my acquaintance was using some 16 separate machinery and drilling operations to produce the cutout for a sewing machine cabinet. By the installation of special drill jigs, in unison with specially designed saws and routers, it was possible to cut out eight of the 16 operations. By eliminating eight separate handlings the production per man hour was increased 165%. In addition, a big saving was realized from the eliminating of culls from frequent handling.

Another example of which I am quite familiar was the installation of a conveyorized finishing operation to replace a fleet of over 200 floor trucks used to store the material while in the various stages of finishing. The mere utilization of useless factory

space overhead was a factor of economy. The elimination of non-productive handling, that adds nothing to the value of the material, is of vital importance in the conservation of manpower.

Work simplification has been promoted through the installation of air cylinders to machines, thus in many cases increasing the efficiency of machines beyond expectation.

The first requirement for a successful work simplification program is that the executive management of the company be completely sold on the desirability of starting it. Work simplification is, in a sense, creative in that it seeks to discover and develop new ways of doing things. Because of this it will necessarily upset some preconceived ideas as to how certain things should be done.

It is not the purpose of this article to explain the steps necessary to set up a work simplification program, but rather to point out its advantages and possibilities if pursued earnestly by management who is looking for ways to cut costs as competition becomes keener and sales are falling off because of high factory costs.—H.C.

Production Procedure May Need Improving

There is a definite pattern for all production work; that is to say, there is a time and motion procedure for every product in the line. New products that are placed in the production schedule generally get first priority in regard to tooling up for their manufacture. New tools are bought or made in the tool room. Operational sequence is studied, tried out and perhaps changed before it is finally accepted.

When all of the "bugs" have been worked out and the new fixtures, jigs,

GLOBE BRANDS

BRONZE POWDERS . . .
all shades and grades
for various purposes

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ALUMINUM POWDERS AND PASTES

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GOLD, SILVER, COMPOSITION
AND ALUMINUM LEAF

B. F. DRAKENFELD & CO., INC.
45-47 Park Place New York 7, N. Y.
Your partner in Solving Bronze Powder Problems

Drakenfeld

The Sign of
CLINCO
Highest Quality

LACQUERS - - -
- - - ENAMELS

Let us help you with
your finishing problems

THE CLINTON COMPANY
1210 Elston Ave., Chicago 22, Illinois

templates and the sequence of operations are functioning correctly, we sit back and look it over with justifiable pride.

But what about the old products, those that have been in production for several years? When these products were new, they came in for searching study, and they have been riding for a long time on a once meritorious system. Perhaps it is still a good system. Just because it is old is no sign that it is not good. But perhaps it could stand a little improvement here and there. Many new products and methods have been developed in the last few years and it is just possible that some of these could be injected into the production of these older line products.

Open Air is Free, But Compressed Air Costs

"Free as the air", may be a trite saying, but it definitely does not refer to compressed air. Air compressors, their operation and maintenance cost real money. Leaks in air hose, pipe connections and nozzle valves are the chief sources of air wastage.

Every leak adds to the load on the compressor, and the worst of it is that these leaks produce a continuous load on the compressor until they are repaired. In a large plant, with long air lines and a multitude of outlets, the chances for air leaks are increased. Perhaps some of the operators could stand a friendly reminder to be a little more concientious about the use of air.

It might be well to assign the responsibility of checking up on air waste to a certain member of the maintenance crew. If it is one man's business, the chances are that most of the air leaks will be eliminated.

AMAZINGLY ACCURATE TESTING GAUGE NOW AVAILABLE!

Permits quick measurement of nonmagnetic, coatings of a ferrous surface with an accuracy of ± 5% ± .0001".

Write today for free folder giving full details

FERRO ENAMEL CORPORATION
4155 East 56th Street
Cleveland 5, Ohio

RESTORE PAINT IN 2 MINUTES

PER GALLON WITH MIRACLE BLUE - BOY 5 GALLON PAINT REJUVENATOR

Paints, lacquers and enamel products can be restored to their original consistency without opening the can. Units available to handle from ¼ pint to 50 gallon drums. Immediate delivery.

Originators of paint rejuvenating equipment---sixteen years—thousands of satisfied users.

Write for folder & prices

MIRACLE PAINT REJUVENATOR CO.
127 E. 9th Street St. Paul 1, Minn.

Random Comment on the Industrial Scene

(Continued from page 9)

is not wetted by water; it cannot be gelatinized by heating in water; it floats on the surface of water without clumping.

The manufacturer says that potential applications for Dry-Flow include rubber dusting, flatting agent in lacquers, detackifying agent for rubber articles formed by the dip method, anti-halation powder for the back of photographic films, prevention of sticking of viscous materials to container walls, lubricating agent, and cosmetic powders.

* * *

Stainless Steel Plywood Panels called Armorply are now available. Stainless steel is bonded to the plywood. Panels are also made with aluminum or zinc plated steel faces. The latter are especially adapted for coating with an organic finish.

These metal faced panels form a waterproof, sanitary surface which is easily cleaned. Put together with splines, they can be quickly set up or taken down and moved to a different location.

They are especially adapted for walk-in coolers in food processing plants, and in laboratories as well as for decorative treatment of lobbies, offices and meeting rooms. These metal faced panels might be the answer to definite cost reduction in many manufactured products.

* * *

Bearings That Don't Need Oil. A new engineering manual treating the principles and applications of "oilless" wooden bearings in modern machine design has just been published by the Paramount Oilless Bearing Co. of Worcester, Mass. *(Cont'd page 124)*

TOMORROW'S Products Tested TODAY

A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

SOUTH FLORIDA TEST SERVICE
EST. 1931
4201 N. W. 7th St. Miami 34, Fla.

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FINISHING AND RUBBING ROOM SUPPLIES AND EQUIPMENT

Immediate Delivery

We specialize in SUNDSTRAND Sanding and Rubbing Machines

Wilkinson Equipment & Supply Co.
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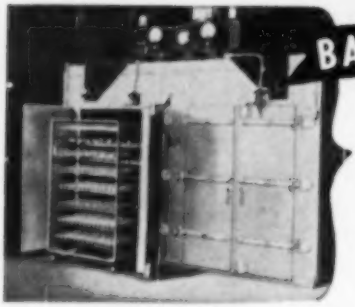
CONSTANT STUDY AND RESEARCH . . .

one of many reasons for the INDUSTRIAL FINISHING leadership enjoyed by the

NATIONAL
LACQUER & PAINT CO., INC.

7415 S. Green St. Chicago 21, Ill.



BAKING and DRYING OVENS

For Processing • Varnish Baking • Paint and Lacquer Drying • Lithographing and Decorating. Batch or Conveyor Types for any fuel. Write for Bulletin 3.

YOUNG BROTHERS COMPANY
1835 Columbus Road Cleveland 13, Ohio
Established 1896

FOR ALL FINE FINISHES
TAC-ALL
TACK RAGS
Packed bulk or individually.
Prices and samples on request.
GEO. W. RENNER CO.
2309 Lillie St., Ft. Wayne 5, Ind.

LACQUER THINNER
VINYL THINNER
available for immediate delivery.
AMERICAN CHEMSOL CORP.
639 Fourth Ave. Coraopolis, Pa.

The book considers application of wood bearings in certain fields where no other type bearing can serve so satisfactorily or efficiently. It treats of the basic engineering principles involved in calculating loads on bearings, analyzing friction, determining wood and lubricant characteristics, effects of circular motion and bearing temperatures. From these factors are derived some typical applications: use in machinery where oil drip and spatter from conventional bearings spoils valuable yardage material or products; use in locations of difficult or impossible access where bearings must remain perfectly self-lubricating for a long term of years; where it is desirable to protect shafts and journals from scoring; and where elimination of noise is paramount.

Costello, Jr. and Livingston Now Head H. V. Walker Co.

James W. Costello, Jr., has been elected president, and H. R. Livingston has been made vice president of the H. V. Walker Co. (lacquers, enamels, varnishes and synthetics), Elizabeth, N.J.

Mr. Costello, formerly vice president, succeeds George W. Lonergan who has resigned the presidency and has become a member of the board of directors.

The new president is the son of the late James W. Costello, who was president of H. V. Walker Co. prior to his death in 1942.

Mr. Livingston has been with H. V. Walker Co for 15 years and has been comptroller the past seven years.

Mrs. Edith L. Costello, widow of Mr. Costello, Sr., has been elected secretary-treasurer.

George English Passes Away

The Hilo Varnish Corp. regretfully announces the death of George F. English, who was with the company for more than 28 years, selling users of protective coatings in Chicago and vicinity. At his death, Mr. English was manager of the Hilo Chicago branch. He died on January 2nd at his home in Hinsdale, Illinois, at the age of 64. Surviving are his widow, Mrs. Mary English, a son and a daughter.

BE FRESH . . . STAY FRESH!

on

Paint Spray Jobs

wear a DUPOR No. 4

The favorite paint spray respirator! Rubber face mask provides air-tight fit over nose and mouth. Twin filters keep aggravating fumes, gases, vapors out of lungs. Also wear as protection against sawdust, silica dust, grinding compounds.

COVER'S GAS-TIGHT FOG-PROOF GOGGLES $1.65

Sample sent $1.65 *pp*

H. S. COVER, South Bend, Ind.

BOOKS On Finishing Available

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1142 NORTH MERIDIAN STREET INDIANAPOLIS 4, INDIANA

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A. J. Wittenberg, president, announces the merger of the Crown Oil Products Corp., and the A. J. Wittenberg Corp. to form the Crown-Wittenberg Chemical Corporation, with offices, laboratories and manufacturing facilities at 2-14 49th Ave., Long Island City, N. Y.

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WANTED.

Director of industrial finishes development, to assume complete charge of laboratory division of established Philadelphia manufacturer of paints, enamels, lacquers, stains, fillers and specialty coatings for product finishing. Position will require extensive experience in formulating and servicing industrial finishes. Write, giving us all particulars concerning your background, experience and salary required. All replies will be kept strictly confidential. Address IF-703, care Industrial Finishing.

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Experienced Paint Spray Equipment salesman. Good salary plus commission. Address IF-712, care Industrial Finishing.

SALESMAN WANTED.

Industrial finishes salesman wanted by national manufacturer to cover Pittsburgh, Pennsylvania territory. Address IF-713, care Industrial Finishing.

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Excellent opportunity for industrial coatings salesmen. Must be experienced and have good following. We can guarantee excellent materials at competitive prices. Well organized laboratory and plant. Territories: New England, Middle Atlantic and Southern States. Give details in full. Address IF-705, care Industrial Finishing.

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Experienced paint salesman to call on Midwestern Railroads; Chicago, St. Louis, Omaha, Kansas City, Minneapolis and Detroit. Headquarters in Chicago. We will turn over a substantial business to right man. Salary and/or commission. Please contact DEVOE AND RAYNOLDS CO., 1481 S. 11th St., Louisville 8, Ky.

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If you are now selling Industrial type paints to manufacturers for their use on the products they manufacture, or have successfully done so in the past, and now live in, or would want to live in the Cleveland area, we would be pleased to have you contact us. The Jones-Dabney Company, as one of the outstanding manufacturers of industrial lacquers, varnishes and enamels, has an unusually attractive remuneration plan which will yield a high income to the salesman who can successfully produce. The man we want will be one who will not require further training for this position and this is an excellent opportunity for the proper individual. Please write at once, giving the details you know would be essential for further consideration, and address your reply to R. A. SMITH, JR., Jones-Dabney Company, Station E, Louisville, Ky. Replies will be treated in confidence.

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Progressive independent paint manufacturer needs salesman for So. Ohio and No. Indiana territories. Ability to service and demonstrate helpful; top sales ability essential. Development and manufacturing facilities to satisfy man with broad following. Write, giving full details. Address IF-714, care Industrial Finishing.

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One 4-ft. or 6-ft. water wash spray booth. Must be in good condition. Give all details and price. Prefer DeVilbiss type. SIFO COMPANY, 353 Rosabel St., St. Paul 1, Minn.

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Will Buy your dirty Thinners and Solvents. Send sample or letter giving approximate contents and solids. Address THE JOHANN CO., 633 E. 138th St., Dolton, Ill.

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One Infra-red flat bed convevor oven 54-in. wide by 37-ft. long; belt width 46½-in. Conveyor equipped with two speeds, baking tunnel 8-ft. long, holding 160 lights. Price reasonable. Full details on request. ANDERSON & SONS, INC., Westfield, Mass.

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Conveniently located in Newark, N. J. industrial section. Ample transportation. One two-story brick building 30x100-ft. Sprinklered. Equipped with steam heat Scott Marine Boiler 125#. One one-story fireproof modern concrete building 30x110-ft. Concrete office building 30x30-ft. Three iron buildings, 10,000 sq. ft. yard space with street entrance. Forty-foot brick stack 30-ft. wide with five boiling units. Address IF-695, care Industrial Finishing.

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Here is a book that answers all the questions on finishing metal products and shows the methods, techniques, and cost factors in producing them.

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KOCH *Industrial* NEWS

DE BURGH CONVEYORS — INDUSTRIAL OVENS — AIR MAKE-UP SYSTEMS

SMALL PLANT GETS LARGE PLANT ECONOMIES WITH DE BURGH SYSTEM

Quality Improved, Damage Repairs Eliminated, In Fine Furniture Factory

Craftique, Inc., makers of faithful reproductions of fine period furniture, needed a conveyorized finishing system to boost production, lower costs and permit handling mixed loads in the same run.

These objectives, says Mr. L. P. Best, president, have been gained through the recent installation of a DeBurgh Finishing System.

Corner cupboards going through first lacquer operation. Conveyor elevation 18" for most convenient working height for various size pieces.

Daily output was increased 30% and the quality of the finish actually improved, Mr. Best said. "Without the conveyor," he added, "It would have been necessary for us to put an addition to our plant."

DeBurgh Finishing Systems are manufactured and installed by GEORGE KOCH SONS, Inc., Evansville 4, Indiana.

General view of system showing corner cabinets entering close pack at dryer.

SYSTEM PAYS FOR ITSELF; FINISHING SEQUENCE AND PRODUCTS EASILY CHANGED

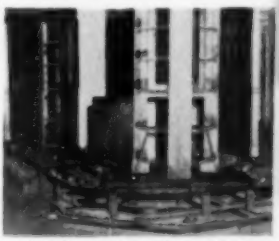
In the Craftique plant, installation of a DeBurgh Finishing System makes possible a reduction of 48% in finishing labor costs.

This is a rather common experience with DeBurgh users, most of whom report that the system actually pays for itself within 9 to 12 months.

DeBurgh features, including "close-pack", control drying, guaranteed production rate, production and operating flexibility, solve problems never before considered possible on a power conveyor.

Operating flexibility permits devoting as little or as much time as is required.

For full information, write or wire GEORGE KOCH SONS, Inc., Evansville 4, Ind.

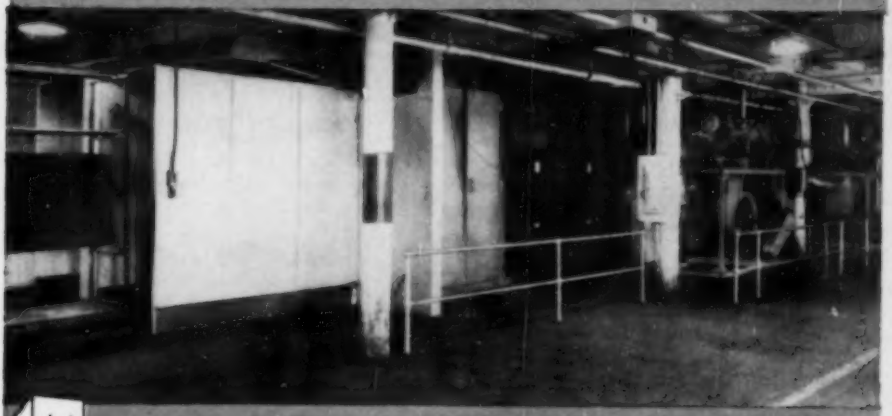


Another view of continuous operation showing minimum space required for 180° turns.

GEORGE KOCH SONS, Inc. EVANSVILLE 4, INDIANA

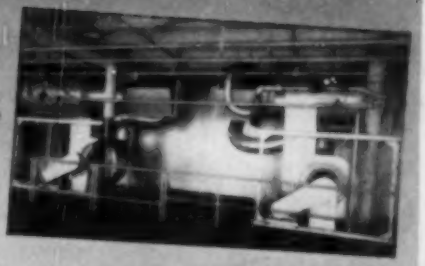
KIRK AND BLUM

TWIN OVENS ...SPEED PRODUCTION



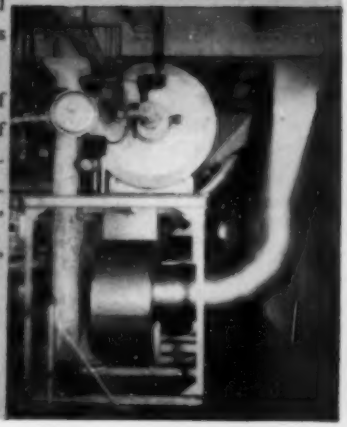
UNUSUAL OVEN JOB DESIGNED AND BUILT BY KIRK & BLUM FOR THE GLOBE-WERNICKE CO.,

... famous office equipment manufacturers



At The Globe-Wernicke Co., Norwood, Ohio, Kirk & Blum 64-foot twin ovens speed the finish of metal office equipment. Primer and finish coats on metal sub-assemblies are baked to the exact requirements of each. This unusual installation ups production, improves finish, saves labor, fuel and floor space.

From mammoth conveyor ovens to the smallest of laboratory units, Kirk & Blum builds many types of industrial ovens for a multitude of uses. All incorporate controls to meet production and safety requirements. Write today for catalog, "Industrial Ovens." The Kirk & Blum Mfg. Co., 2831 Spring Grove Ave., Cincinnati 25, Ohio.



KIRK AND BLUM

INDUSTRIAL OVENS